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ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

CARCINOMA OF THE CERVIX*

By B. C. GARRETT, M.D., Shreveport, La.

Carcinoma of the cervix is twenty times more common than carcinoma of the fundus according to Wertheim. It is estimated that more than 10,000 women die annually with carcinoma of the uterus. Statistics show that most women thus affected die within three years from the onset and the majority during the first and second years.

From the standpoint of treatment carcinoma of the cervix is classified into three types in this paper. They are as follows:

First. Those cases in which surgery and radium will benefit or cure.

Second. The further advanced cases in which the uterus may or may not be fixed; the growth is still mostly confined to the cervix and cervical canal; the vaginal wall may be slightly involved.

Third. Those cases in which surgery is not indicated and in which radium gives only temporary relief.

*Read before the Louisiana State Medical Society Meeting, April 11 to 13, 1922.

The first class of patients have caused a great deal of discussion since radium has made its value known therapeutically, for it is a problem whether to operate or whether to use radium. However, in the earlier cases while the growth is still local and the uterus freely movable, it has been our custom to operate unless contra-indicated by disease of heart, lungs, blood vessels or kidneys, because the mortality following operation at this time is low, the post-operative sequelæ the minimum, the chance of recurrence not so great, and the end results good. Nevertheless, some capable men have quit operating on any kind of cancer of the cervix, no matter how early the diagnosis, since the advent of radium, but it strikes us that until we have learned something more about radium than most of us know now we shall not go wrong by operating on these cases which are diagnosed early. For, until the method of application and dosage of radium become standardized we are apt not to get the best results; while, on the other hand, the operative results, technique and treatment have been worked out long ago by many surgeons and we know what to expect.

A word as to diagnosis of this condition: What one surgeon or pathologist would term an early cancer might be diagnosed a more advanced cancer by another, so that it will be readily seen how different diagnoses affect the percentages of different operators; therefore, the value of percentages is relatively of small benefit to us unless they are secured by the same group of operators.

The second class of patients have cancer of the cervix in a little more advanced state than the class just described. The vaginal wall, the bladder and the rectum may be slightly involved but there is little or no fixation of the uterus. This class has caused no few surgeons to worry. Should the patient have an operation or could she be cured by radium? No doubt there have been many lives lost both by being too conservative and by being too radical in treating this type. If an operation is performed, it must be the most severe type of a major operation and therefore all operators are not capable of performing it. Clark says: "If an operation or other therapeutic procedure is to have a permanent place in our armamentarium it must be sufficiently easy to make it available, not only for a few skilled specialists, but for the great body of surgeons. In these days

of low mortality percentages attending nearly all the major operations, no major operation can possibly gain headway which combines with it a shockingly high mortality and a distressing number of sequelæ. It is possible that when we make a final summing of our combined experiences we may have to accept the conclusion that a less radical operation even though it save fewer lives, may be preferable when attended by a low surgical mortality and few or no operative sequelæ." This states the case admirably.

I have no figures to present just yet but I am sure that the results of our preliminary treatment with the Percy Cautery was about as good as those we are getting with radium preliminary to operation. Both the cautery and radium cause a clearing up of the local field to such an extent that sometimes after one or two applications the patient feels that she is well and does not return for further treatment until too late. However, we have discontinued the use of the cautery since the advent of radium.

Most of the radiologists tell us not to operate on a case that has had radium treatment because trauma excites cancer cells, but we know that radium is only a local remedy, its rays extending only from about two to six centimeters from place of application; so why not operate after its application and clear away the remaining foci if possible? We have had several such cases upon which we operated, but unfortunately, I have not been able to follow them up very closely. However, I recall one patient on whom we operated about a year ago. Patient was a young woman thirty-four years old—entered hospital for constant menstruation. Examination revealed a cauliflower carcinoma of cervix with partially fixed uterus. She was given three applications of radium, the first and second applications being thirty days apart followed by a third fourteen days later. After first treatment patient's general health was better, and the local growth very much diminished in size, no bleeding. The day following second treatment patient had a very severe hemorrhage which required packing to control. After remaining in bed two weeks growth was gone, and uterus which had been formerly fixed was freely movable, which led us to believe that the fixation was probably caused by the inflammatory condition. Fourteen days following third treatment we did a pan-hysterectomy on

patient, upon examination of tissue the pathologist found that a small spot in cervix showed cancer cells. Now one year after operation she is still apparently well, but how long she will be so free from evidence of cancer we are not in a position to say.

Parenthetically, we are like many others in that we do not carry out the operation as outlined by Wertheim in all cases because we found that the mortality was too high in our hands. On very fat and old women we do the vaginal hysterectomy, and we only operate on those cases which have the growth confined to the cervix and the cervical canal.

In reviewing the literature I notice that a great many pathologists tell us that the sqamous cell type of carcinoma responds more readily to treatment than the adeno-carcinomatous type but I have not checked our cases along this line.

Our method of applying the radium is usually fifty milligrams for twenty-four hours' exposure filtered through silver, brass and hard rubber, with the application repeated in thirty days. We have observed that the maximum results are obtained in two or three treatments. We also realize that there are about as many techniques of giving radium as there are groups owning it.

Dr. Deaver recently made the statement that radium had been often tried but the results were unsatisfactory in a great many cases. We have had a similar experience but it would not be fair for us to judge as we have used it mostly in the far advanced cases.

Our third class of patients are those who have carcinoma in the far advanced state and are inoperable. This class constitutes the saddest cases of all for there is practically nothing that can be done for them, and it is quite usual to see a mother with a house full of children who need her very badly thus affected. Radium, I suspect, has been used in these cases more than in any others but with only temporary relief. Here are some of the general characteristics of such patients: General health much below par, cacethic possibly losing a great deal of blood and with a thin watery discharge, mixed with cheesy looking pieces of sloughed tissue, the odor very characteristic of the disease. Sometimes the bladder wall and rectum are involved before patient is seen by the doctor. We have six of these poor unfortunates under observation at this time and they are all

getting worse. Most of them improved under the radium treatment from two to six months and then gradually began to get worse again. The most notable change was a general improvement in health and an incidental clearing up of the local field, the pain and hemorrhage being much less but the thin watery discharge never disappeared. When the symptoms of these patients began to return it was a striking fact that three of the six complained first of pain in the right hip radiating down the thigh. Just why it should begin to involve the right side first I do not know.

We have not been so unfortunate as to get vesico-vaginal fistulas, etc., following the application of radium as reported by some in the literature. Our results with it have been more effective with elderly people as would probably be expected; also we have been very successful in controlling bleeding in cases of fibrous uterus by its application.

Cancer of the cervix of young women under thirty is not as rare as might be supposed. There were six such cases, colored, in the Charity Hospital at Shreveport during the past year, three at the same time.

Much is being said about deep X-ray therapy in the treatment of the non-operable cases and the results have been very favorable in the few cases that we have used it. Dr. Barrow, our radiologist, has had the larger machine only a short time and therefore, we have had very little observation of its affects. But the rays seem to affect sarcomatous growth more than the carcinomatous if we may judge by the fact that a few cases of sarcoma we are treating are improving more rapidly than several cases of carcinoma.

DISCUSSION.

Dr. S. C. Barrow, Shreveport: Dr. Garrett's paper was written on the treatment of cancer of the cervix, but it really deals with cancer of the female pelvis. It has not been my observation that we find very many cases of carcinoma of the cervix. Unfortunately they come to us as cancer of the female pelvis. If they came as cancer of the cervix we could cure them with radium or with the Percy cautery, or with various other things; but the problem we have to meet is cancer in a very advanced stage. The paper really is a condemnation of surgery and radium and the Percy cautery and everything else, but he admits that we are speaking of cancer of the pelvis. And with all of these points I want to agree. The doctor's paper has proven conclusively that surgery is a total failure when it comes to the treatment of cancer as described by him. All of these cases ultimately go back to the radiologist, which has been the dumping ground in the past for surgery, and we are called upon

to treat and cure cases and are condemned for not curing them, even though the surgeon has had the first shot in the early stage and we get them in the pre-death stage.

I made the radium application in all of these cases he described. It did prove that we have done things that he has failed to do. We have relieved these women of hemorrhage, we have relieved them of wasting discharge, and vile odors, and we have at least made them comfortable and livable for a period of months. If the surgeon could do that he would be doing something, but he cannot do that. I have never been an enthusiast about radium. I believe it has a very limited field, and unfortunately we do not get the patient at the stage when we could do something for them. For fiifty years or more surgery has had the field. Radium has been boosted the last ten years because of the fact that the surgeon is able to use it. If he had mastered the more difficult technique of deep X-ray therapy we would have been many miles ahead in the solution of the entire problem. I pin my faith in the cancer problem to deep X-ray therapy—I mean super-deep X-ray therapy. Recently there has been an apparatus devised by which we can shower throughout the pelvis radiation equal to what radium can do locally. If we can get radium in contact with the cancer cell we have got it, but unfortunately we cannot get at where the real fire lies. We know now that we have an apparatus by which we can put throughout the pelvis the same radiation that we have been putting against the cervix. Unfortunately, our apparatus has only been installed a few weeks and I cannot speak personally, but I have confidence that great things will be accomplished. The plea I want to make is, give us a chance. Do not send these cases when you have exhausted every means at your disposal, but send them to us when we have a chance. The greatest problem in cancer today is the surgeon. The problem of the surgeon is how to cure cancer, but the problem of the radiologist is the surgeon. They keep these cases away from us until it is too late. Give us a chance with our modern treatment and I believe we will be able to do something for them.

Dr. J. M. King, Nashville, Tenn.: I am very glad indeed to see such conservatism in the application of radium. Of course, Dr. Kelly, of Baltimore, has probably used this treatment more than any man in this country. I am a little afraid we are about to go astray on this subject. I am not a surgeon, but I have observed a great deal of treatment with X-ray and in the last few years with radium. We are apt to go astray as many men went astray on salvarsan in the treatment of syphilis. I always had the idea that it took mercury to cure syphilis and I think the idea is settled today that both salvarsan and mercury are needed, but that mercury is really the treatment for the disease. Radium is an adjunct in these cases. If we could get cervical cancer at its incipiency and then apply radium we could get results; but often when a case presents itself it has unquestionably gone too deep into the musculature, and we apply radium and get a soft, smooth scar and suppose it is cured. I believe that carcinoma should be thoroughly cauterized, the tissue destroyed as far as possible to prevent any grafting of the cells upon the fresh wound, then followed by the application of radium. After that is done, I believe, as Dr. Barrow has said, that deep X-ray therapy should always be applied. The dose should be the heaviest dose the patient will stand, taking age and everything else into consideration.

Recently I had a case of large cauliflower cancer of the cervix that was regarded as inoperable. In consultation we decided for an operation. The surgeon did a hystorectomy and we have now given that woman twelve or fifteen deep X-ray treatments through

the front and also through the back and repeated the radium treatment. That was three years ago and she has regained her weight, regained her blood, and she may live long enough to raise a family of four or five children.

I recall distinctly one case that is unusual. Twelve years ago amputation of the cervix was done, later on a recurrence took place and the uterus removed. Two years after that the patient came into my hands on account of a recurrence. She had X-ray treatment at that time to the extent of holding it in abeyance. For several years she went along quite well. About two years ago she presented herself again with considerable recurrence and then we applied radium a number of times. I gave her drastic treatment. The nodules have passed away and she is enjoying as good health as she did twelve years ago, and is well as far as we know.

Dr. J. A. Danna, New Orleans: I rise as a surgeon to say that I believe surgery has no place in carcinoma of the cervix. The reason radium has not the good name it ought to have is that we speak of using radium just as though you could drop a radium capsule into the vagina and that is all. Radium is a powerful agent; but it is as dangerous as a red-hot poker. You would not stick a red-hot poker into a woman's vagina and hold it there for one or two hours and expect to get results. You would be careful just what you touched with it and how deeply you inserted it and you would be very careful that it did not come in contact with healthy tissue. And here we learn that lesson about radium and until the surgeon begins to handle radium himself and protect it properly, you will not get satisfactory results, from radium. I have not done an operation on the cervix in a good while, but I am using quite a good bit of radium. Again I repeat that I do not believe surgery has any place in carcinoma of the cervix.

Dr. B. C. Garrett (closing): Dr. Barrow "passed the buck" to the surgeon and I suppose we will pass it to the laity. The trouble is we do not see these cases early enough. In cases of early carcinoma of the cervix where we do a laparotomy, we follow that with deep X-ray therapy as discussed by Dr. King. I repeat that we do not get these cases early enough. Of course, when they get far enough along they are gone. In the early stages radium will possibly cure them as well as an operation, but until we know this for a fact we shall continue to operate on the earlier cases.

TOXEMIA OF LATE PREGNANCY.*

By G. M. G. STAFFORD, A.B., M.D., F.A.C.S., Alexandria, Louisiana.

I have selected this subject, not with the hope or intention of advancing anything new or original, but with the view of presenting to you our present-day conception of what I regard as the most serious complication of the pregnant state.

In the toxemia of early pregnancy the brunt of the attack is confined to the metabolism of the patient. Later, however, especially after the formation of the placenta, the pathology is transferred chiefly to the vital organs, the liver and kidneys being more profoundly affected.

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*Read before the Louisiana State Medical Society Meeting, April 11-13, 1922.

We know beyond dispute that eclampsia is a toxemia due to certain poison elements retained in the blood; we know that the liver cells are seriously damaged and that the glycogenic function of this organ is much impaired; we know that the kidney parenchyma undergoes certain changes, but what we do not know is the source of this subtle and sometimes fatal toxin which saturates the blood stream and leaves its mark on so many of the vital organs.

It has been suggested that it resulted from intestinal toxemia. This theory had found many advocates and there is a certain plausibality about it, and there can be no doubt but that the intestinal tract is a common contributor to the degree with which all pathological conditions are manifested, but as the cause *per se* of eclampsia it can not be accepted.

The theory that this toxemia is of placental or fetal origin has found much credence, but the conservative element of the profession looks askance at it.

The liver is primarily blamed by some investigators, and whereas there is no doubt that this organ is "hard hit" in eclamptic conditions, still we believe this to be a result of the toxemia rather than the cause of it. The same may be said of the kidneys. Other theories point to a change in the general metabolism; to a bacterial origin and finally to a disturbed balance of the glands of internal secretion as the cause of this disease.

If we were certain of the etiology our treatment would not be so empirical and the maternal mortality would not continue to be over 20% nor the fetal mortality over 30% as has been the case for the past century.

When once eclampsia has set in there will be little change in the death rate, but the time for action is before the storm begins. I do not believe that as a general rule we give the pregnant woman a square deal. We are prone to look upon this state too lightly. We should see more of our patients; keep in closer touch with their condition, examine the urine more frequently and pay more attention to their complaints, and not make light of them and say, "Oh, that is perfectly natural in your condition." In our urinary analysis it is not sufficient to examine for the presence of albumen and in its absence be satisfied with the results. A complete urinalysis is necessary, especially to determine the

nitrogen output; the presence of indican and the appearance of the acetone bodies. This information is of vital importance, and we are all in close enough touch with some good laboratory from which such information can be obtained.

If we will watch our cases closely we will generally have sufficient warning of the approach of eclampsia, and with proper care I believe many cases may be warded off. When the condition has once set in the resources of the physician will be put to a crucial test. What is the rational course to pursue?

Time is more precious then than in most medical problems we encounter. The teachings of the past, and to a large extent of today, are to regard the gravid uterus as the "*causus belli*" and empty it immediately,—to anesthetize the patient and deliver at once. It was found in many cases that even when this was done the convulsions continued or the patient remained in a comatose condition and continued so until the end. It was also found that forcible and rapid dilatation and the dragging the fetus through the unprepared birth canal by "main force and awkwardness" did such irreparable damage in many instances that the remedy proved worse than the disease. It was found besides that these toxic patients with crippled livers and kidneys proved bad subjects for prolonged anesthesia.

The men in charge of the great clinics and lying-in hospitals of the world began to reflect on the results of this dogmatic teaching of immediate delivery. More attention began to be paid to the pathology of the disease, and the treatment by elimination and waiting came into vogue, and in many places it became a dogma as radical as the other extreme.

I believe there exists a happy medium between these two extremes, and when we consider that each case is a problem unto itself, and allow ourselves to be governed by existing conditions and act accordingly, we will have served the best interest of our patients. If we have a case where dilatation is complete or easily obtained I think there can be little doubt that immediate instrumental delivery is the best procedure. If our patient is in fairly good condition and labor has not set in or the cervix is rigid and but slightly dilated, we may wait and try to neutralize and eliminate the toxin present. Cesarean section is advocated by many as the method of choice in this condition. It is well to bear in mind that an eclamptic woman, on account of the profound tox-

emia, is a poor surgical risk. Dr. Edward P. Davis of Philadelphia says there is only one indication for Cesarean section in these cases. I quote the following from his lecture on the subject: "When, in a primipera, the fetus is in good condition, the cervix unshortened, undilated, and unsoftened, convulsions appearing or threatening, and the whole condition has arisen suddenly, immediate delivery by abdominal Cesarean section is indicated provided the fetus is at least viable."

It has been the almost universal custom in the past to rush to a case of eclampsia with a bottle of chloroform and keep the patient under it as long as convulsions persisted. Prolonged general anesthesia is bad in this class of patients and chloroform is especially bad as is also nitrous oxide. If an anesthetic must be given, ether is the safest, but unless a surgical procedure is contemplated it is better to control the convulsions with morphia.

I would like to add here that the determination of the creatinin content of the blood as indicative of the ultimate renal efficiency, if such is obtainable, may aid us in arriving at a prognosis in many of our cases.

The work done by Titus and Givens of Pittsburg in the treatment of eclampsia is worthy both of mention and trial. They claim that the pathological progress of this form of toxemia is dependent upon a carbohydrate deficiency in the maternal organism, particularly in respect to the impairment of the physiologic activity of the liver when unduly depleted of glycogen. It is their contention that a carbohydrate deficiency exists and that the organism calls on the liver to the extent of exhausting its stored glycogen supply, with the result that peripheral necrosis of the liver lobules takes place. They insist that glucose given intravenously in aqueous solution of 5 to 25% strength serves rapidly to restore the depleted and damaged liver cells and the liver is thus strengthened as a detoxicating organ. The clinical results of these investigators in a large number of cases are extremely gratifying and encouraging. Further investigation along these lines should be undertaken.

In summing up the modern conception of treatment as I see it I would conclude with these remarks: Treat the individual patient and do not follow routine measures. Avoid chloroform and nitrous oxide and use ether sparingly. Put your patient in a hospital if possible and try elimination by warm blankets,

copious gastric lavage leaving a purgative in the stomach, repeated irrigation of the intestine, and solutions of sodium bicarbonate and glucose by proctoclysis. Bleed your patient if high blood pressure exist and use intravenous injection of glucose. Control convulsions with sodium bromide and codein and resort to morphia if necessary. If no improvement takes place and labor has not set in and the patient is a multopara, induce labor by rupturing the membranec and using a Voorhees bag, and as soon as dilatation is obtained apply forceps. If labor has already begun and there is sufficient dilatation deliver as soon as possible. If the patient is a primipera and there is no dilatation and the case seems a grave one, then do an abdominal Cesarean section.

DISCUSSION.

Dr. B. T. Sellers, New Orleans: We should feel indebted to Dr. Stafford for presenting this most important subject in such a practical way.

Dr. Barton Crook Hirst believes that the principal cause of the toxemia of pregnancy is the toxines liberated from the foetus and placenta into the maternal circulation, thereby overtaxing the vital organs mentioned in the paper just read.

Of course, any other condition that would liberate toxins in the body, such as an excessive protein diet or a focal infection, must be considered a strong predisposing factor of eclampsia.

Dr. Aldo C. Massaglia has done a great deal of work on the parathyroid glands in their relation to eclampsia. His conclusion is that para-thyroid hypo-function in pregnancy or in puerpurieum is certainly a pathogenic factor in eclampsia.

We must not forget the importance of the low protein diet through the puerpurieum in all cases. During the world war the percentage of eclampsia was reduced by one-half in Germany and Russia. This, most likely, was due to the scarcity of food rich in protein.

I cannot emphasize too strongly the necessity of a routine examination of the urine, and blood pressure reading at regular intervals during puerpurieum. As Dr. Stafford has just brought out, the important thing is the early recognition of the beginning of trouble.

I am an advocate of a modification of the plan of treatment outlined by Dr. McPherson of the Lying-in Hospital of New York, which is as follows:

Immediately on entering the hospital put the patient in an isolated room, which is dark and quiet. Take the blood pressure; a catheterized specimen of urine to be examined at once; give one-half grain morphine by hypo; stomach lavage, leave two ounces of castor oil in the stomach after lavage; colonic irrigation, using five gallons of 5% glucose solution or sodium bicarbonate; keep patient's skin active. If patient's blood pressure is over 175, do a venesection to bring it down to 150. I do not inject anything in the vein until after delivery, then inject 500 c.c. of a 5 to 10% glucose solution. Give ¼ grain morphia every hour until respiration is down to 8 or 10 per minute. As a rule the convlusions are controlled and the patient will be in labor. If not, I would follow the plan suggested by Dr. Stafford both in inducing labor or in the few select cases do a Cesarean section as stated by Dr. Davis. I feel

quite sure that there is a tendency to operate on too many of these cases.

Spinal puncture has been mentioned by several writers as being beneficial in cases where the cerebral symptoms are pronounced. I feel sure that it is worth trying.

There are two sides to this great subject of toxemia of pregnancy, besides the intelligent care of the physician much depends on the co-operation of the patient. It is very true that "One ounce of prevention is worth one pound of cure" and "One pound of co-operation is worth a ton of argument."

Dr. W. B. Hunter, Coushatta: I wish to say that if you will try apomorphine instead of morphine I believe you will like it. You will have relaxation, perspiration and possible vomiting which will help to eliminate instead of drying the secretions. I have used this in two cases and one of these was a post partum eclampsia lasting one day and night and another day. I used chloroform until I saw the patient would die if I continued it, so I switched to apomorphine and nitroglycerin. In another case, after delivery, the woman continued to have convulsions. I stayed with the patient all night and the next day and she lived. In that case I followed the old plan of giving a teaspoonful of calomel and then followed it in five hours with as much salts as I could pour down by the mouth, until I finally got results. These patients both got well.

Dr. Peter B. Salatich, New Orleans: A very successful drug in my hands has been veratrum veride. I would like to report a case of a woman who came in with an elongated os, a primipara, no signs of labor. The os was rigid and she was having convulsions and the blood pressure was 180. I gave about three minims of veratrum veride and the blood pressure dropped to 140 and the convulsions stopped. We tried to dilate the cervix and dilated it until we could get in a Voorhees bag. After two hours the blood pressure came up and we gave some more veratrum veride, when it went down again. After about three hours we gave her quinine and then, instead of using instruments, we gave her three minims of pituitrin. Then we put on the low forceps and delivered this woman, but she had no more convulsions.

Dr. I. J. Newton, Monroe: I will discuss only one phase of this important paper. At such times as the physician determines to empty the uterus by artificial method, I wish to place my emphatic preference to abdominal Caesarean operation to the application of forceps or any other method mentioned. My reason is that it requires so little time to do a Caesarean section—from eighteen to twenty-five minutes, requires less anaesthetic than to conduct a forcep delivery, produces less shock, and avoids the usual traumatism due to forceps, presents a clean-cut wound in sterile tissue, whereas the wounds caused by forceps occur in tissue easily infected. For the past five years, in the practice of myself and my associates, we have performed twenty or twenty-five Caesarean operations, I do not recall the death of a mother or child. The operation may be spectacular, but in my opinion is easy, quickly performed, safe and in every way to be preferred to any other method of procedure in these cases, demanding immediate relief.

Dr. J. L. Adams, Monroe: I want to stress one point that Dr. Stafford made. He said the mother was not getting a fair deal. Just who is responsible for that unfairness is a question. It is not always the physician, for the reason that many times the patients are scattered far and wide over a district and it is almost impossible to see them as frequently as the doctor would like. That is where the patient does not get a fair deal—they are not looked after properly. Of course, it is impossible to have them under constant observation, but they should be looked after a little closer than is

customary. It makes little difference what the causal element is which produces the emergency, but with the man in the small town these are practically all emergency cases when they get them, and consequently they have to act as the emergency demands.

Adjournment until eight o'clock.

UNUSUAL CASES SHOWING DIAGNOSTIC VALUE OF THE X-RAY.*

By LESTER J. WILLIAMS, M.D., Baton Rouge, Louisiana.

With a good case to present, a lawyer arranges his evidence, and should he deem it sufficient he allows the testimony to plead for itself and submits the case to the jury without argument. Emulating the example of my friends among the disciples of Blackstone, I am submitting four cases—Fracture of the Tibial Spine, an Osteochondroma, Schlatter's Disease and Perthes' Disease—in support of my paper's title, entirely without argument.

Fracture of Spine of Tibia.

The rarity of fracture of the tibial spine can best be shown by a reference to the American literature on the subject. Kurlander, in 1915, reported a case of this nature which he had previously seen. This was only the second time that an article upon this type of fracture had appeared in America. For reporting the first case the honor should go to Pringle. In 1907 he reported two cases, one of these being an American. Both cases were operated upon by suturing the tibial spine to the tibia. This seems to be the earliest recorded history of operation in this class of cases.

Pringle went a bit farther in investigating the actual cause of the fracture by experiments upon the cadaver. His final conclusion was that excessive tension upon either the anterior or posterior crucial ligaments (depending upon whether the leg was extended or flexed) caused the avulsion or fracture of the tibial spine.

The following case, for which I am indebted to Dr. R. C. Kemp, rather clearly illustrates the way in which the force which fractured the tibial spine was transmitted by way of the posterior crucial ligament. In this case the knee was flexed with the posterior crucial ligament tense at the time of the accident.

W. J. McL., aged 31, a boilermaker's helper, was engaged on January 20, 1920, in cutting the bolts holding an intermediate

*Read before the Louisiana State Medical Society Meeting, April 11-13, 1922.

tower head to the flue sheet. Standing under the head he cut the last bolt and noticed the head falling towards him. In this position the tower head, weighing about seven hundred pounds, struck him on the left thigh. He was knocked down and with his left knee still flexed and very much abducted, the metal block fell over on his knee. He suffered severe pain and was unable to extend the knee.

Twelve days after the accident (February 7, 1921) an X-ray examination revealed a complete transverse fracture of the spine of the left tibia, with both inner and outer tubercles involved. A plaster of Paris cast was applied and a second X-ray examination showed the position to be good.

After six weeks of extension the plaster cast was removed and active and passive motion begun. The case made an uneventful recovery with a complete restoration of the normal function.

Chondra-Osteoma.

Osteochondroma, while a developmental exostosis, is frequently diagnosed as sarcoma and in the case I am reporting, the advantage of being able to exclude malignancy before operation is rather apparent.

I am indebted to Dr. W. R. Eidson for referring to me this interesting case of chondro-osteoma; a case similar to the one reported by Dr. George P. Muller, except that Dr. Muller's patient was a boy with the growth on the humerus, and this a girl with the tibia as the site.

R. S., aged 14, weight 94 pounds, height 50 inches.

Family history: Both father and mother in good health, the former 57, the latter 51. Three brothers, two living and well, one died at age of four with measles. Three sisters, two living and well. The patient's twin sister died at age of 18 months of cerebral hemorrhage. Maternal grandmother died of carcinoma of the uterus, aged 55. Aunt on father's side died of carcinoma of uterus. No tuberculosis in family.

Past history has no bearing upon case.

Present illness or complaint: About four years ago, when taking off shoe, noticed a slight swelling on front of left leg just above ankle. Had never noticed it before, but had felt that shoe was a little tight. Since then swelling has grown to present size. Occasionally a sharp pain lasting only a moment was felt in the swelling, otherwise it has been practically painless. A few

months ago, after a bruise, the place has been tender to touch, but has not interfered with walking.

Physical examination: Shows well developed and well nourished white girl. No general adenopathy, anemia of mucous membranes of eyes and lips. Throat normal. Eyes react to light and accommodation. Lungs negative. Heart shows systolic murmur over base, no enlargement. Abdomen negative. Upper extremities negative. Lower extremities: On the anterior surface of the lower third of left leg is seen an enlargement about the size of a lemon. This enlargement is of a bony hardness and apparently attached to the tibia. Circumference of leg over enlargement is 9¾ inches, as compared to 8¼ inches in right leg. Patellar reflexes active but not exaggerated.

Blood: Hemoglobin 70. Red blood cells, 3,725,000. White blood cells, 7,000. Neutrophiles 56%, Lymphocytes 42%, Eosinophiles 2%.

Urine: Negative.

X-ray findings: A dense bony tumor, arising from the anterior surface of lower third of left tibia, extending from the epiphysis to a point 5 cm. above the epiphysis. The tumor appears lobulated and seemingly growth springs from periosteum. In the postero-anterior position the growth measures 32 mm. by 35 mm., the lines of the tibia in this position seem intact. A lateral view shows the tumor projecting anteriorly 16 mm. and exhibits bone production within tumor; this bone is laid down perpendicular to shaft. With no signs of invasion the tumor was declared not malignant and classed as an osteoma.

Under ether anaesthesia the bony cartilaginous tumor was exposed and removed by chiseling close to the shaft of the tibia. Eleven days after operation the case was skiagraphed while still in plaster of Paris, and revealed a perfect operative result.

Now, a year and a half have elapsed and the little girl presents no evidence of her former trouble, she dances and plays with ease, showing no indication of any difference in the use of the legs.

Remarks: Osteochondromas, usually multiple, appear as a rule in the adolescent period of life.

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1. **Muller, George P. Chondro-Osteoma of Humerus in Young Boy. Surgical Clinics of North America, February, 1921.**

SCHLATTER'S DISEASE.

This affection, also known as Osgood-Schlatter's Disease, is a separation of the anterior tubercle of the tibia, and due to the interest awakened by the articles written by Osgood, Schlatter and Dunlop, additional cases of this rare condition are being reported.

The word disease is used, although the majority of authorities class it as an injury rather than a true disease. Instead of trauma others have mentioned tuberculosis, syphilis and late rachitis as causative factors. While those presenting the latter theory are greatly in the minority, I am inclined to believe that there is a predisposing cause with trauma as the exciting cause of the condition.

Soliere suggests that an endocrine insufficiency may be responsible for the trouble in the absence of a definite history of injury. Tubby presents a case in which he states that "the affection occurred spontaneously in the left knee of an overgrown boy of 12 years." Isn't it possible that a derangement in the glands of internal secretion could account for Tubby's case as well as the one I am reporting through the courtesy of Dr. Tom Spee Jones?

The case history follows, but note particularly that this boy of 15 weighs 205 pounds, somewhat of an argument in favor of the endocrine insufficiency.

J. G. P., aged 15, weight 205 pounds and 64 inches tall.

Family history: Father, aged 42, in good health, mother, aged 43, health also good. The only living grandparent is the maternal grandfather who at 82 is in remarkably good health. No hereditary diseases are noted in causes of death of patient's relatives. He is the oldest child in a family of five children. A brother two years younger was discovered to have had hydrosephalus when one year old and was under active treatment for this condition for two and a half years. At present this boy, at 13, is much oversized, is **6** feet tall, weighs 120 pounds and wears a 7¾ hat. He has always been precocious and is well in advance of children of his age.

The other three children are all healthy, none of them showing the overgrown characteristics of their older brothers.

Past history: Measles at age of 10, influenza at 11, followed by an attack of varicella.

History of injury: During a game of football, in attempting a long kick, he felt a sudden sharp pain in the right knee, and for some time was unable to extend the knee or put foot to ground.

Physical examination: An overgrown white boy, who walked with great difficulty, presenting a definite point of tenderness over the tubercle of the right tibia. He complained of pain upon motion, seeming to be relieved upon elevating and resting the leg. There was some swelling noted in front of and below the tubercle of the tibia. The ligamentum patellæ was abnormally prominent.

X-Ray findings: An avulsion of the tongue-shaped tubercle of the right tibia.

Treatment: A plaster of Paris bandage was applied, patient put at rest with a complete subsidence of all symptoms. No X-Ray examinations were made after the initial one as condition was so completely relieved that this was deemed unnecessary.

Summary: Schlatter's Disease is usually seen during the adolescent period, and almost always in active boys.

There is an underlying predisposing factor, probably an endocrine insufficiency.

Trauma furnishes the exciting cause whether in the form of a direct blow to the tubercle of the tibia, a cross strain or from frequently repeated light blows. Similar to this condition is the "Sprain fracture" described by Callender in 1870.

Pain, tenderness and swelling near the tubercle of the tibia (the so-called Rugby knee) constitute the principal symptoms.

Prognosis is good if leg is put at rest by immobilization.

PERTHES' DISEASE.

Whether we call osteochondritis deformans juvenilis of the hip Perthes', Legg's, Calve's Disease, a combination of the three names or Coxa Plana the fact remains that we are dealing with a most interesting condition, especially as it has been so often mistaken for tuberculous hip. The claim of Waldenstrom for priority in recognizing the condition as a "morbus sui generis" should be ruled out, for his writings of March, 1909, decisively contend that the disease was of tuberculous origin.

Legg is really entitled to the honor of being the first to write up on the subject but he failed to suggest the pathology, and

for this omission has failed to receive the recognition that is properly due him.

The etiology is rather obscure, although Legg is of the opinion that trauma produces damage to the blood supply, and that the changes in the ossification of the bone are secondary to this damage.

From an X-Ray standpoint the point to be particularly stressed is the wide discrepancy between the mild clinical symptoms and the alarming bone changes that the X-Ray skiagraph shows.

C. P., 8 years old, returned from school complaining of a "cramp in left leg." He denied having been injured, and repeated questioning on the part of the father failed to have the boy alter this statement in any way. At this time there was a slight limp, which he attributed to the pain in the thigh. He had no elevation of temperature, and the family dismissed the condition as trivial. Persistence of the limp for five months together with an atrophy of the left hip and buttocks caused the family to have the child examined.

Family history seems rather negative as no history of tuberculosis or syphilis could be elicited, nor does anything in the boy's past history have any bearing upon the case.

Physical examination: A small undersized Italian boy with a mentality below that of a normal 8 year old boy, was seen. While his general health appeared good, he seemed poorly nourished. He walked with a slight limp and it was noticed that there was a slight atrophy of muscles of left hip and buttocks with an apparent prominence of the great trochanter. There was no shortening of the left leg and the tenderness of left hip was not marked, as he complained of no pain in jarring heel. Flexion of the affected limb was fairly good, extension somewhat limited. Abduction of hip markedly limited. Rotation of flexed femur moderately limited. No signs of crepitation.

X-Ray examination: The entire pelvis was skiagraphed for the purpose of comparing the seemingly normal right side with the affected left. The right femur is normal for an eight year old boy; the upper border of the left femoral head instead of its natural curve is "mushroomed" into a flat uneven surface. The epiphyseal line between the head and neck is irregular.

There is a blurring or haziness of the acetabulum, in its articular surface, more particularly the iliac portion.

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DISCUSSION.

Dr. A. Henriques, New Orleans: Dr. Williams has presented a very interesting paper from several points. While he has confined his remarks to the osseous system, it is a frequent occurrence for us to find, not only in the osseous system, but in other parts of the body, unusual findings with the X-ray. The X-ray has come in for more or less criticism at these meetings and I would like to refer to the paper of Dr. Willis yesterday in which he said that the X-ray findings in osteomyelitis might lead to harm or be misleading. In acute osteomyelitis we do not attempt to derive any information from the X-ray except, perhaps, in a negative way. In the early stages of acute osteomyelitis we see no bone changes with the X-ray, and for seven or eight years we have not tried to show the changes of acute osteomyelitic cases, because they do not show. In making an examination of the bronchial tree for suspected foreign bodies, if there is a metallic foreign body it shows up very readily. If there is a foreign body which is non-metallic, it casts no shadow, but very often it acts as a valve and we can frequently determine the location of that foreign body. Some cases that present perhaps clinical evidence of tuberculosis will show the location of this non-opaque foreign body by the appearance of the lung on the affected side; we find a flattened diaphragm, a restriction of motion, and an emphysema

on the affected side. Fractures of the spine of the tibia are very difficult to recognize without the X-ray. Where there is an elevation of the tubercle of the tibia it is sometimes a question whether that separation is normal or not, the variations from the normal are so great that at times it is difficult to say whether we are dealing with a normal separation or with something that is due to trauma.

The doctor emphasized correctly the important point that in Perthes' disease the discrepancy between the clinical symptoms and the amount of disease present is sometimes very marked. This proves that the X-ray shows that we can have mild clinical symptoms and yet a great amount of pathology. This is true not only in Perthes' disease, but in other conditions. Take cancer of the stomach—the symptoms may be mild and yet the X-ray will reveal a very extensive amount of disease. The same thing is true in other parts of the body—in the lung. It is becoming customary to X-ray the lungs before operating upon cancer for fear that metastasis has already taken place although the clinical signs may be very slight.

Dr. Isidore Cohn, New Orleans: I am sorry that Dr. Williams has not shown his pictures, particularly in regard to the factor of tubercle of the tibia or the tibial spine. Unless one knows the appearance of the normal tubercle of the knee or the normal joint he will be at a loss to make the diagnosis. For some reason I thought Dr. Williams was going to present one of the cases I happened to have along with him, a normal knee of a boy about fifteen which shows an apparently marked separation of the tubercle of the tibia. That is the normal appearance of the tubercle of the tibia. It travels from above downward and there is apparently a wide separation. This is cartilaginous, and is not a real separation at all.

I want to take issue with Dr. Henriques, and that is that we must not depend on the X-ray for diagnosis in fracture of the tubercle of the tibia. The doctor says, however, that he means the tibial spine. There we are bound to have a certain amount of effusion into the joint with localized pain, and while we should depend largely upon the X-ray, let us not begin to depend on it too much but try to make a diagnosis by some of the clinical manifestations.

Dr. J. T. O'Ferrall, New Orleans: I am glad the question came up in regard to the tibial tubercle and the tibial spine. There should be a very distinct differentiation of these two structures. A fracture of the tibial spine is very much more serious and very much more difficult to diagnose and cure than the separation of the tibiai tubercle, and for the audience to get the two structures confused is rather unfortunate. We ought to lay a great deal of stress on the fracture of the tibial spine and the separation of the tibial tubercle. I do not think we ought to get into the habit of interchanging these two terms.

Sir Robert Jones of England has probably done more knee joint surgery than any other living man and has written some very wonderful articles on the subject of diagnosis of fracture of the tibial spine. He has concluded very definitely that it is due to an **avulsion** by the condyle of the femur. It is not apropos for me to discuss the cause of this fracture or its treatment, as the doctor's paper was on X-ray diagnosis. The point I want to make is the distinction between these two structures.

The most important part of Dr. Williams' paper is the early diagnosis of Legg's disease. It is a diffcult diagnosis to make and is so frequently confused with tuberculosis. X-ray diagnosis is of the utmost importance and certainly it is primary to the clinical symptoms. In a case of so-called quiet hip disease with slight limitation of motion the child certainly should be subjected to careful and repeated X-ray examination.

THE PREVENTION OF OTITIS MEDIA AND SINUSITIS IN ACUTE CORYZA AND INFLUENZA.*

By M. P. BOEBINGER, M.D., New Orleans, La.

In considering the chain of pathological conditions consequent to an acute coryza, never was the old adage of "An ounce of prevention being worth a pound of cure" more applicable. Chronic otitis media with diminished acuity of hearing, a fetid aural discharge may be looked upon as minor inconveniences; but when we consider mastoiditis, cerebral abscess, and lateral sinus thrombosis as possibilities, the simple coryza, and influenza rhinitis as a potential destroyer of life must not be ignored.

There is a traditional belief among laymen that dentition and running ears are two perfectly normal physiological conditions that occur in the life of every child, and often the general practitioners lay too little stress upon its occurrence.

The occurrence of otitis media in infancy is principally favored by the anatomical peculiarity of the infantile eustachian tube. The tube in the new born and very young is short, wide, and placed very low, near the floor of nose. It contains abundant myxomatous tissue, which is excellent culture medium for invading bacteria.

In addition to anatomical peculiarities in the tube itself, middle ear catarrhs are traceable to acute or chronic changes of the nasopharyngeal tract in the majority of cases, and which may lead to catarrhal involvement of the sinuses and middle ear. Disturbed ventilation of the sinuses and the tympanic cavity always leads sooner or later to catarrhal or suppurative affections.

It may easily happen that the mucus present in the pharynx, aspirated fluid, etc., may enter the tympanic cavity of the very young during deglutition and vomiting, especially when in the recumbent position. Frequent changes of position should be made, that there be no accumulation of mucus in the nasopharyngeal space.

Furthermore, there seems to be a possibility that in infants and young children up to the age of two or three years, who suffer from serious affections, there occurs spontaneous suppuration of the mucus tissue in the middle ear, owing to general debility and anæmia. In these cases the micro-organisms,

*Read before the Louisiana State Medical Society Meeting, April 11-13, 1922.

which are always present in the nasopharyngeal tract, but cannot bring about a purulent inflammation in a healthy child, may lead to suppurative decomposition of the mucous tissue of the tympanic cavity, which is an easy prey to infection and purulent transformation. The healthy tympanic cavity is germ free.

Symptomatic Peculiarities: The most important point is that in infants and young children there may exist not only catarhal affections, but also purulent inflammations of the middle ear, with apparent light or without any symptoms, in spite of serious conditions. The author recommends examining the ears of infants and young children in all febrile affections "Even in the absence of ear symptoms." It is not before the fourth month that infants direct attention to the possibility of an auricular affection by rubbing the ear, putting the hand to the head, crying whenever the ear or its vicinity is touched, and even avoiding to lie on the affected side.

Premonitary Signs and Symptoms of Aural Involvement: As the infections of the ear in the great majority of cases take place through the Eustachian tube, the symptoms first involve that organ, a feeling of fullness and stuffiness, cracking noises when blowing the nose, periods of sudden deafness alternating with periods of almost normal hearing. These changes in aural acuity are sudden and depend on the occlusion and patulousness of the Eustachian tube. Subjective noises and autophony are experienced. The pain is at first lacinating and neuralgic in character, felt only at intervals. It then becomes constant and increases in intensity. This latter change indicates that the pathological process has passed beyond the Eustachian tube, and an acute inflammation of the tympanic cavity has been established.

Functional tests are of the greatest diagnostic and prognostic importance where any involvement of the middle ear is concerned, and too much stress cannot be laid upon its application in the condition under discussion. The simplicity of procedure in making the watch or whispered voice test should recommend them. A slight involvement of the pharyngeal end of the tube will cause a diminution in the acuteness of hearing, which can be elicited by examination. In babies and very young children, the subjective examination is not of very much value, but pain

with sleeplessness, restlessness and manipulation of the auricle, will draw the attention to the ear. Then is an otoscopic examination imperative.

An extremely characteristic symptom of acute infantile otitis, is the sudden onset of fever, in which the temperature reaches the highest possible degree in the first few days. Temperature of 104 to 106 degrees is by no means rare. The fever is of the continuous type, and the return to normal or subnormal is usually a sign of complication. After complete development of an empyema of the middle ear, the fever may abate or entirely disappear without perforation of the drum, but spontaneous perforation may still occur later.

It should be most particularly emphasized that in influenza otitis, nothing but timely energetic measures can promote an uncomplicated favorable course, and the prevention of complications. "It is advisable not to wait for spontaneous perforation, but to affect an early relief of the middle ear by paracentesis."

Earache seldom attains such a degree of severity in adults as in children. The pains are seldom continuous, but intermittent. They increase particularly in the afternoon and night, and again remit in the course of the day.

Diagnosis: Based on the triple symptom complex. Pain in the ear, diminished hearing acuity, temperature, and the otoscopic picture should assist the aurist to a correct diagnosis.

Hearing test in infants: Use well known noises, such as striking a bell, glass, rattling keys, etc.

Prognosis: The prognosis is favorable in otherwise robust, well nourished patients. Early energetic treatment should be instituted.

Treatment: (Local) In order to prevent infection of the sinuses and the middle ear from the nasopharyngeal tract, use very warm normal saline irrigations three times daily (with head lower than the plane of the body) using medicine dropper for infants, and irrigator for adults. (Do not use too much force.) Instillations of 5 drops of a 1/16, 1/8, 1/2 per cent solution silver nitrate, or five per cent solution of argyrol into the nose (one hour after salt solution has been used), with frequent changes of position that there be no accumulation of mucus in the nasopharyngeal space. Adrenalin plugs (sol. adren glycer-

in and aquæ) may be inserted into the nasal canals, or the same formula can be used as a nasal spray every three hours. This, and the careful washing with normal saline solution three times daily, and the careful cleansing with cotton tips saturated with vaseline oil or a ½ per cent of menthol vaseline solution, will keep the same permeable.

Inserting cotton plugs or gauze strips saturated with anodyne or astringent remedies, or corresponding instillations into the affected ear.

Ac. Carbol.	dr. j.
Glycerine	oz. ss.
Aquae q. s. ad.	oz. i.

M. Sig.: Three to five drops instilled into ear canal every 3 to 4 hours.

Phenol	gr. x.
Cocaine Hydroc.	gr. iv.
Atrop. Sulph.	gr. 1-100
Glycer.	oz. ss.
Aquae	q. s. ad. oz. i

M. Sig.: Five drops into ear canal every three hours.

Severe earache is sometimes relieved by instillations of 3 to 5 per cent carbolglycerin solution or anæsthesin and adrenalin. A cotton tip, saturated with 5 per cent cocaine or novocain solution, is inserted up to the drum membrane. This may have a very good, though only temporary, effect. Rest in bed and free purgation are essential.

Anæsthesin in 2 to 5 per cent oil solution instilled into ear channel is very efficacious.

Insertion of cotton tips saturated with warm adrenalin solution has a temporary beneficial effect. Applications of heat (compresses) and irrigations of *very warm* salt solution, has a favorable effect. In other cases, again, cold compresses exert a better effect. Warm saline irrigations for ear canal and nasal chambers act very favorably. Hot boric compresses for the relief of attacks of pain. A piece of linen or heavy layer of cotton the size of the palm of the hand, and dipped either into lukewarm water or a weak Burrow's solution, (5:25) or into a solution of tincture of opium. This is now laid upon the region of the ear, covered with oiled silk, and bandaged with a dry cloth. Such an application is changed 3 or 4 times daily. Many times the warm applications are not borne well, in which case one must apply cold applications. (If the patient is unable to sleep on account of pain, it is advisable to give some narcotic; only when necessary).

A mixture of olive oil and chloroform in equal parts to rapidly reduce the painful attack; this latter remedy is more effec-

tual if 20-30 drops are poured on a piece of cotton the size of a saucer, and applied to the region of the ear. A ½ per cent aqueous solution of carbolic acid, to which a one per cent saline solution is added. Five to six drops of a one per cent cocaine solution, and an equal number of drops of adrenalin chloride solution into the nostril, with the head lower than the body and inclined towards the affected side, by which the drops of the fluid reach the epipharynx, lateral wall of pharynx and pharyngeal orifice of the Eustachian tube.

Use nail of index finger to remove adenoid vegetation only in vicinity of Eustachian tube and Rosenmuller fossa. This has given the author excellent results. (This can be done at home or office.)

Physical and mental rest, and copious evacuations of bowel tract are of importance. Hot sweat baths are also helpful. Aspirin, phenacetin, salicylates, and etc., are internal remedies which may have an anodyne effect. These remedies, taken in hot lemonade, are recommended at the beginning of the disease, to produce powerful diaphoresis. Opiates should be avoided, if possible.

The patient should remain in bed as long as the temperature is elevated. As soon as this returns to normal, which is usually the case on the third or fourth day, resorption of the middle ear exudate are assisted by the application of Politzers air douche. (This can be done at home.) Alcoholic beverages, strong tea, coffee and tobacco, are to be avoided. In considerable pain and fever all anodyne remedies will soon lose their effect. In these cases it is advisable not to wait for spontaneous perforation, but to perform paracentesis without delay.

The hearing acuity is tested before and after an insufflation, and if the hearing is found to have improved, it is an exceedingly favorable prognostic sign.

Opening of the tympanic membrane by paracentesis is indicated if conservative measures bring no relief, the pains continue, and the temperature does not recede to normal. The time for action is determined by the following considerations:

Adoption of a waiting attitude without any definite purpose in view is not correct. The fact should always be kept in mind that in doubtful cases it is always better to carry out paracentesis than to neglect it. Early paracentesis is important, as

its omission may be responsible for the sudden development of a grave cerebral symptom complex, (meningism) and other serious complications.

Paracentesis, if carried out under such aseptic precautions as are possible in the ear, is not fraught with much danger. (Literature reports several severe hemorrhages, following paracentesis; this, however, is rare.) It is only when paracentesis is done under unclean conditions that the danger exists of transforming a simple into an infectious purulent middle ear inflammation. On the other hand, omission of timely paracentesis may cause irremediable damage, which may lead to severe complications and even death.

After the inflammatory manifestations have abated, and the tympanic membrane is no longer hyperemic, treatment of the nasopharyngeal tract must be instituted. Surgical interference should be instituted as early as possible.

The patient should not leave his room in cold or stormy weather, until all the reactive symptoms have disappeared. If, however, the patient has fever, he must remain in bed. Where we wish to stimulate perspiration, by which the pains are rapidly relieved, we allow the patient to drink a cup of hot tea or lemonade, to which we add aspirin grs.-5, every 4 hours. The salicylic preparations all produce sweats. In the reactive stage the diet must be regulated, and the use of alcohol and tobacco forbidden. A purge of calomel often brings about rapidly a feeling of relief. Paracentesis of the drum membrane is indicated in acute middle ear inflammations only when, with constant accumulation of secretion in the middle ear, the severe pains continue, with or without fever, in spite of every local medication. Paracentesis is contra-indicated in the milder forms of acute middle ear inflammations.

Sinus treatment: The treatment of a given case of sinus disease depends upon a great many conditions. Not only the precise stadium of the disease, but the individual symptoms present are the keynote upon which to base our therapeutic efforts. The author recommends prompt and energetic means.

When a patient's mucous membrane of the nasal tract is hyperæmic and engorged, headache, fever and all the symptoms of an acute inflammation, we must necessarily accept that the mucosa of the sinuses are sympathetically affected, for such is,

indeed, the case, since influenza has generally been considered the most potent factor in the causation of sinus affections.

The precise rationale why the bacillus shows especial predilection for the mucous membrane of these structures, has not yet definitely been explained. Whether the organisms gain entrance through the air passages, or through the blood, appears also to be an undetermined question. Some authors claim that the sinuses are always diseased at some time during the course of influenza. The writer believes that since the lining membrane of the sinuses is the same as that lining the nasal cavities, only in a more modified form and on account of the proximity of the sinuses to the nasal chambers, and knowing that the natural habitat of the influenza bacillus is the nasopharyngeal tract and that all inspired air must travel through the sinuses, that this explanation seems the most reasonable.

We must put the nose in the best possible condition to examine the drainage pasages of the sinuses. A hot normal salt solution should be used, and the nose thoroughly irrigated, after which a mixture of a 5 per cent solution of cocaine to which has been added a few drops of a 1/1000 solution of adrenalin and a 2 per cent antipyrin solution, applied on a cotton pack, (tied with a heavy thread, and the patient told to remove it in about one hour, by pulling on the thread) thus insuring good depletion. This in itself will frequently occasion the greatest relief to the patient, especially if the sinuses are not seriously affected. Our next step is to ascertain whether the sinuses are secreting pus. We have two main objects to attain: (a) to keep the patient comfortable, and (b) to allay the inflammation and prevent sinusitis and otitis media. The first part is carried out by keeping the drainage passages as clean as possible. This may be accomplished in several ways: First, by applying a strong solution of cocaine, adrenalin, and antipyrin at least twice daily, and after the parts are thoroughly contracted, to irrigate the nose with a hot saline solution. This latter has two principal actions: First, to wash away any superfluity of cocaine, thus preventing its being absorbed into the general system; and, secondly, to relieve the engorgement of the sinus mucosa. Between treatments, deep inhalations of Menthol dr. one, Tr. Benzoin comp oz. four, through the nose every two hours. Two tablespoonfuls to half pint of water on

gas stove, and allow to boil. Sittings should last at least 15 minutes. This will usually suffice to keep the nose clear. The menthol and heat act as a stimulant and depletory on the swollen and inflamed mucosa, causing an increased flow of secretion with reduction of turgescence. In this way the drainage passages are gradually opened, thus allowing the pent-up secretion to escape, the sinus mucosa to become medicated with the vapor, and the pressure symptoms (headache, congestion, etc.) to be relieved.

The second object is to allay the inflammation. This is accomplished both by local and general treatment. When practicable, the electric-light head bath, consisting of several incandescent lights which are made to shine directly upon the face of the patient (the eyes being protected) may be used to considerable advantage. The rationale of this method is to produce an active hyperemia, which acts in the same manner as heat applied to any acute inflammation. Sweating is promoted to enforce the action of the hyperemia by the administration of 7½ to 15 grs. aspirin in hot lemonade half an hour before the electric-light bath.

Local treatment: Ice cold compresses over the eyes, forehead and temples; hot fomentations or hot water-bag may be substituted if the cold proves disagreeable, the writer's experience proves the latter to be better borne. In this way it is usually possible to cure the acute attack in from 48 to 72 hours. If, in spite of our treatment, the inflammation progresses and the symptoms become dangerous, it will be necessary to resort to a surgical procedure, the severity of which will depend upon the virulence of the disease. Just as soon as the attending rhinologist can succeed in shrinking the nasal mucosa, he should apply a silver nitrate 4 per cent solution after first using cocaine and adrenalin. This should be repeated every 24 hours, and, during the interval, an argyrol 10 per cent solution as a spray, high up into the nasal chambers every two hours. The above treatment in acute coryza and influenza, if carried out early enough, often aborts sinusitis and otitis media.

The usual custom of administering hot alcoholic drinks to cause diaphoresis, is strongly to be condemned in patients suffering from possible sinusitis and otitis media. Alcohol invariably add fuel to the fire by causing congestion of the cran-

ial circulation. Coffee and tobacco act in a similar manner, but in a milder degree.

After the calomel has acted, Spts. Ammonia Arom. M xxx every hour, is given for 10 hours, after which the following is prescribed:

R—Sodii Salicyl
Quinia Bisulph A A Gr. XXX
Pulv. Ipec. et Opii Gr. XV
Fiat. Caps. No. XV.
Sig:—One capsule every two or three hours.

DISCUSSION.

Dr. J. T. Crebbin, New Orleans: I wish to emphasize the point which the essayist brought out, that in the examination of children, especially when cross and irritable, we more frequently find the cause in the ear than in any other part of the anatomy. In the beginning, fever is to be taken into consideration, but only for the first few days. After that it is not an infallible sign. Sometimes, we as physicians, make a mistake by taking fever into consideration after the third day. A complete tympanotomy should be done in the beginning; do this absolutely when you are in doubt. It is better not to procrastinate, and then find you have mastoid involvement.

I question the practicability of using irrigations. That can be done in your own hands, but the laity should not be advised to use it. Frequently they will drive the infection farther back and set up a greater trouble in the mastoid process. The question I wish to emphasize, is, that I do not believe in using irrigation or allowing the laymen to use it. But if you insist upon using it, use it yourself.

Dr. C. A. Weiss, Baton Rouge, La.: The doctor has evidently tried to follow the plan of making the paper of this special section appeal to the general man, and has, therefore, gone into more detail than were this paper read before a body of ear, nose and throat men exclusively. One of the most prolific sources or causes of middle ear and sinus involvement, in my opinion, is the improper way of blowing the nose—one nostril should be gently blown at a time, and the greater the infection of the nasal mucous membrane and the more plentiful the secretion, the more carefully should the nostrils be blown. The reason should be apparent to every one. Where the mucous membrane of the nose and nasopharynx is congested and the passages occluded with mucous or muco-pus, a 10 or 15% silver albuminate will undoubtedly help to remove the secretion, and by its defusability prevent to a large extent the involvement of ears and sinuses. If the nose and throat specialist can devise some positively efficient preventative he will be in a fair way of killing the goose that laid his golden egg.

Dr. Cathrell: What does Dr. Boebinger think about autogenous vaccine?

Dr. M. P. Boebinger (closing): In answer to Dr. Crebbin, I repeat, that, in order to assist the infant and prevent acute coryza and sinusitis, I always have the infant laid across its mother's lap with the head lower than the body, and then use a normal salt solution, and tell the mother how to use it to wash the nasal cavities. I do not remember any case where this has caused mischief. In the infant you do not have the development of the sinuses, and the possibilities of causing mischief by washing is certainly reduced to the minimum. Your organism is usually mixed. Incidentally, probably all children are born with adenoids, but they do not all come to the operating stage. Washing the nose of the infant or even

of grown people will not cause mischief if you use a weak solution. However, do not extend the irrigator farther than a foot above the head. You may use large ear syringe for irrigation, do not use much force.

Dr. Weiss says that Dr. Goldstein does not permit his patient to blow his nose. I will put it up to any intelligent man here—if your nose is stopped up and you have an acute coryza and influenza, do you blow your nose? Blow it one side at a time and not too forcibly because there is always a chance of infection of the sinuses and middle ear.

THE LATE TREATMENT OF FRACTURES OF THE LONG BONES OF THE LOWER EXTREMITY.*

By JOHN T. O'FERRALL, M. D., New Orleans, La., Consultant Orthopedic Surgeon, U. S. Veterans' Bureau; Dist. No. 6; Chief, Orthopedic Service, Charity Hospital; Chief, Orthopedic Service, New Orleans Dispensary for Women and Children; Senior Orthopedic Surgeon, Touro Infirmary.

The title of this paper is meant to indicate the treatment of fractures of the lower extremity after the reduction or attempt at complete reduction has been accomplished.

The object in presenting the paper is to bring to your attention again a few long established facts in relation to the formation of callus, in the repair of bone tissue, and its adequate protection. While all are familiar with the function of callus, yet it is almost a daily occurrence that one overlooks its properties and disregards the limit of its endurance.

When a normal bone sustains a fracture nature, almost immediately, begins its repair by throwing out granulation tissue composed chiefly of osteoblasts. This occurs whether complete reduction has taken place or not. If complete or functionally complete reduction has taken place the cohesive quality of the callus begins the union of the fragments. While this thin callus cannot be demonstrated by X-Ray or palpation, yet its power of fixation, assisted by normal muscle action is more than sufficient to maintain apposition of the both ends. This apposition is continued by proper splinting until the callus has matured and the calcium deposit has taken place sufficiently to approach the consistency of bone. Among the inexperienced and the uninitiated one finds the common error that of applying splints very tightly to maintain the position of fragments. Such practice leads to so many cases of ischæmia and many painful hours for the patients, when it is well known that after reduction

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*Read before the Louisiana State Medical Society Meeting April 11 to 13, 1922.

of a fracture pain ceases and only gentle but firm pressure is required to assist normal muscle splinting.

If one considers the type of fracture with which he is dealing, excluding spiral and very oblique fractures, it is known that sufficient union has taken place within a period of from two to three weeks to permit of careful removal of the splint and the beginning of active motion of neighboring joints. I wish here to lay stress upon active motion rather than passive. Great damage can be done by passive movements but it is seldom that a patient will indulge in active motion beyond the point of pain which represents the danger zone. It must be borne in mind, however, that active motion does not mean weight bearing in any way, especially as relates to fractures of the bones of the lower extremity. For many years it has been the teaching of text books and many lecturers that after the reduction of a fracture and proper splinting, the splints should not be removed until six weeks have elapsed at which time complete union has taken place. This is a grave error and cannot be too vigorously condemned. The neglect of early motion in joints adjacent to fractures has in many instances been productive of a disability far greater than that produced by the fracture itself if unwisely treated. Such teaching also fails to put emphasis upon this careful early motion to promote the circulation thereby assuring the formation of callus and avoiding many instances of non-union.

The most common types of fractures of the lower extremities are familiar to all present. Many do not, however, discriminate sufficiently between the ordinary transverse fractures and those of the extremely oblique and spiral types. It is these latter types and those in the neighborhood of joints which require more careful early splinting and extreme caution in the later stages of protection. It is these which are productive of disabling deformities and demand long observation along with function. The valgus deformity after a Pott's fracture, which was thought firmly united in an excellent position; the short leg after a fracture of the hip which left the hospital without shortening, and the outward bowing after a fracture of the middle one-third of a femur or tibia and tibia and fibula, are common sights and represent someone's lack of appreciation

for the properties of callus and the necessity for the adequate late treatment of the fractures under discussion.

Sir Robert Jones some years ago reported a large number of fractures of the lower extremity carefully treated in hospitals and accurately measured upon discharge and no shortening recorded. At the end of six months the greater proportion of these fractures were re-measured and nearly all found to have shortening. What is the answer to this experience? It is that callus formed in the repair of fractures is not sufficiently firm to permit weight bearing without protection for a period not less than six months and in many cases even longer. Therefore, the burden of my song is a plea for early function of joints in the neighborhood of fractures and the adequate protection of fractures upon the resumption of weight bearing and for a sufficiently long period to prevent deformity.

Bum of Berlin recently writes as follows: "The first physician treating a fracture, even the first aid procedures, may decide the fate of a limb. The general practitioner should master the mobilizing functioning procedures so as to know how to keep the broken bone still while the uninjured soft parts and joints are allowed to function.

"In mobilization the strictest individualization is imperative; the age, the site and kind of fracture must be considered in each case. Walking with protection aids consolidation."

In a late edition of Jones' Orthopedic Surgery the following paragraph is found: "Callus of septic fractures remains soft and easily becomes deformed for many months after it is apparently firm. The most efficient stimulus to rapid hardening of the union is to make the patient use the limb, but care must be taken that no bending can occur at the fracture. After any infection the patient must be kept in a caliper for at least six months."

It is incompatible with the best teaching for fractures of the lower extremities to be splinted for so short a time by the average surgeon as is apparent from cases so frequently seen. This unfair haste in pronouncing fractures cured is, no doubt, caused in many instances by the unreasonable demands of the compensation insurance companies who, if they only knew it, are adding trouble and expense to themselves and making a permanent cripple of many of the insured. This prolonged

expense and crippling manifests itself as shortening, non-union and a variety of deformities. A word of warning to these companies would be to pay adequate fees for intelligent care of these important injuries and insist upon functional end results rather than permanent disabilities.

I have made an effort to bring out a reasonable argument for the adequate protection of fractures of the lower extremities substantiated by the experience of others and personal experience. I now wish to bring to your attention the splint which if properly fitted gives adequate protection and permits weight-bearing without trauma to the new callus, that is the caliper splint. This splint of which I have brought an example, if properly adjusted transfers the weight to the pelvis at the tuberosity of the ischium.

It is seen that the caliper splint is made up of a ring of 5/16 round steel bar, slightly ovoid in shape, well padded and especially so at the inner and posterior aspect; this ring is set upon two 3/8 inch iron wire rods at an angle of 55° with the outer rod, these rods extending along the sides of the leg to the sole of the shoe where they are turned in at a right angle and fit with a steel tunnel through the anterior aspect of the heel of the shoe. They are held in the tunnel by a small ankle strap around both bars. The leg is further fixed by a posterior strap behind the knee and a knee cap over the knee joint.

The ring of the caliper is padded twice as thickly at the inner and shorter rod and is symmetrically depressed at either side of the inner rod to form a concavity which hugs the ischial ramus and fits snugly around the ischial tuberosity. The average size of the ring is 9½ inches across the long diameter and 9 inches across the short diameter.

The essential points in the fitting of a caliper are:

(1) That the ring must exactly fit the upper portion of the patient's thigh, taking its pressure at the tuber ischii.

(2) That the side bars must be just longer than the length of the injured limb, in order that when the shoe is fitted and the splint applied the patient's heel shall bear no weight. When a step is then made the weight is taken on the tuber ischii and the heel of the shoe.

To measure for a caliper splint:

(1) Size of ring—measure horizontal circumference of thigh at groin and add 2½ inches.

(2) Length—Measure inside of leg from the crotch to the sole of the foot with the shoe on. (The brace maker then attaches the ring at an angle of 55° with the inside upright; the outside upright is then made accordingly.)

SUMMARY:

(1) Fractures when properly reduced have sufficient union very soon thereafter to permit function of adjacent joints. This joint function should be begun within a period of three weeks and is imperative.

(2) Continuous splinting without observation and joint function is condemned.

(3) Callus in the repair of bones begins to form at once but is not sufficiently hard to permit weight bearing without protection for a period of from four to six months.

(4) The function of joints adjacent to fractures is better accomplished by active motion carefully done than by passive motion.

(5) Protective of fractures of the lower extremity, at the same time permitting walking, is best done by means of the caliper splint which transfers the weight to the pelvis.

(6) The proper measurements for a caliper splint are extremely simple and should be familiar to all engaged in fracture work.

DISCUSSION.

Dr. J. A. Danna, New Orleans: I am not going to burden you with any technical discussion of these two papers, but I would like to leave here with a little increased conception of the importance of fracture of the leg. Here we are, a state medical society in session, and we find the subject taken up seriously by both a surgeon and an orthopedist. The burden of the song of both of them is that when you get a fractured leg, speaking of the subject in general, you must individualize your observation in order to make a proper diagnosis, and individualize your treatment according to the condition existing and as they develop in the case from time to time. Unfortunately, 90 per cent of fractures of the leg treated by the usual slipshod method, will get well functionally and your patient will go on and be all right; but in the other 10 per cent it may require all the skill and professional experience that the surgeon can possibly furnish. I want you to leave here with that idea, that a case of injury of the lower limb requires as much of your professional attention and as much time and contemplation of attention as any case you can possibly have.

Another point is that the earlier you institute treatment in these cases the better. It is very much easier to reduce a fractured leg under anesthesia and put on a simple plaster cast and get a perfect

result immediately after the injury than if you wait an indefinite time. But every injured leg cannot be treated in the same way; you cannot use a routine treatment for a series of fractures. Each individual case has its own special treatment.

Dr. E. S. Hatch, New Orleans: I want to add one word to what Dr. Danna has said, and that is that a fracture of the leg is an important thing to treat. I think we have all seen a great many bad results from improper treatment of a fractured leg. We think a fractured leg is a simple thing, but it is one that requires prompt diagnosis and scientific treatment.

Dr. Cohn made an interesting point about the knee joint. We are all thinking in terms of function today, especially those who do orthopedic work, and I believe that point about the knee joint is well taken. Too many times when there is fracture adjacent to the joint fluid is allowed to accumulate in the knee joint and the doctors seem to think that nature will take care of it. By this treatment function is delayed many months, where a simple aspiration of the joint, which is very easy, would remove the fluid at once.

Dr. Isidore Cohn (closing): Just one point in regard to aspiration, and that is, to culture the aspirated fluid at that time. If the patient has a temperature afterwards, and the first culture was negative, and then on the second aspiration you should find an organism, you know where the infection came from.

In regard to the statement of Dr. Danna, that 90 per cent get functionally well, I am a little afraid he has placed the percentage rather high. I believe that displacement, either laterally or backwards of the tibia or fibula, means disturbance of the normal relationships about the ankle, and I know nothing more important than the aid which the radiologist renders us in the antero-posterio view of fractures of the leg. This should always include the ankle.

Dr. J. T. O'Ferrall (closing): I simply want to stress the point that the callus is not hard enough to permit weight bearing in six weeks, as we are ordinarily taught. The thought that the callus does not remain soft for a number of months is unquestionably responsible for many deformities we have, as deformity of the middle third of the femur and bowing of the tibia. It seems to me very important to consider the softness of the callus and give added protection.

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EDITORIAL.

DISTRICT COLLABORATORS.

In conformity with the policy previously expressed in the Journal, attention is called to the addition to the Editorial Staff, in the form of the District Collaborators, representing all districts outside of New Orleans. This broadens the scope of the Journal and furnishes tangible means for personal contact with all sections of the State.

The functions of the Collaborators are embodied in the following abstract from a personal letter to the representatives of the various districts:

"For your information the functions of the District Collaborators is to furnish the Journal with all news items from their

respective districts, including removals, marriages, deaths and so forth. Also, it is intended that they shall furnish the Staff Proceedings of any hospital in their districts, conforming with the ideas of the American College of Surgeons to the extent of holding regular monthly scientific meetings. These proceedings should be furnished the Journal not later than the 15th of the month, should be typewritten in the third person and preferably in the form adopted for the Hotel Dieu and Touro Infirmary, as published in the Journal at present."

It will be seen, therefore, that any material intended for the Journal should reach the Editor through the Collaborator for the district involved.

NEW SUPERINTENDENT.

If deeds proclaim the man, then the management of the Eye, Ear, Nose and Throat Hospital has acted with far-sightedness and wisdom in the selection of Dr. Charles Chassaignac as Superintendent of the new hospital.

Dr. Chassaignac was one of the promoters and organizers of the former New Orleans Sanitarium. During his regime this institution prospered and successfully performed its various functions under his leadership. He was the organizer and successful Dean of the New Orleans Polyclinic, now the Tulane Post-Graduate School of Medicine. He was the successful organizer and Editor of this the only surviving medical journal ever published in New Orleans. Last but not least, he was pre-eminently successful in his profession. These are some of the accomplishments which speak for and apparently assure the future welfare of the Eye, Ear, Nose and Throat Hospital, certainly in so far as these depend upon an active Superintendent who has already proven his capacity for surmounting obstacles and "carrying on."

SOCIETY PROCEEDINGS.

PROCEEDINGS OF THE HOTEL DIEU STAFF.

Monthly Meeting for May, 1922.

The President, Dr. Homer Dupuy, in the Chair.

BLOOD CHEMISTRY.

Dr. Aldea Maher presented a brief outline of the work and significance of body metabolism as applied to the blood. Endeavor is made to test the various functions by minute chemical analyses and, if possible, to discover the first change before there is definite pathology.

In considering first, the estimation of the non-protein nitrogenous waste products of the blood, it is of importance to mention the methods used and the normal values obtained by these methods. In the interpretation of reports this is necessary since the normal values vary according to the technique employed. There are three main systems in use: Greenwall, Lewis-Benedict and Folin and Wu. In the pathological department the methods of Folin and Wu are used and the normal values are as follows:

Total non-protein nitrogen	25-30 mg. per 100 c.c.
Urea nitrogen	12-15 mg. per 100 c.c.
Uric acid	2- 3 mg. per 100 c.c.
Creatinine	1- 2 mg. per 100 c.c.
Creatine	3- 7 mg. per 100 c.c.
Amino acid nitrogen	6- 8 mg. per 100 c.c.
Ammonia nitrogen	0.1

These waste products are increased in many body impairments, such as nephritis, uremia, hypertension, prostatic obstruction, metallic poisoning, such as lead, and malignancy. The retention in the last named is due to the concurrent nephritis. The determination of the non-protein nitrogenous constituents is of value in the regulation of diet when the patient is in danger of a too restricted protein intake.

As the total non-protein nitrogen is increased, so of course are its respective constituent substances and usually in the following order: First, uric acid, since it is the hardest to excrete, then

urea, and lastly creatine, it being the easiest to eliminate. Creatinine is the most important of all the blood constituents to show retention, as it is not influenced by diet, and even when there may be a normal or low total non-protein nitrogen and urea, the creatinine may be high, indicating that the function of the kidney is impaired. It is the most satisfactory criterion as to deficiency of the excretory power of the kidney and the most reliable indication of the terminal course of the disease. However, too much importance should not be placed in the value of increased creatinine as to prognosis, because when there is a superimposed acute nephritis there will be a high creatinine due to the complete inefficiency of the kidney. When the acute condition clears up the creatinine may be found dropping back to normal. The limitations of this discussion make it impossible to dwell upon the important applications of these determinations, but it seems only fair to mention them.

The application to cases of nephritis is well known, but the results are too often misunderstood. The clinician, in submitting a blood specimen from a known nephritis, is embarrassed and nonplussed to receive a report of normal findings, losing sight of the fact that this procedure is not diagnostic but is designed to inform him whether or not that patient has left to him enough healthy parenchymatous tissue to rid his body of its waste products down to the basal figure.

In cases of pregnancy, when the patient is in coma or stuporous, a urea determination is of great value since a high figure would indicate uremia and a normal or low one, eclampsia. An increase in urea is found in prostatic and intestinal obstruction. The urologist has found it a very valuable pre-operative prognostic test in cases of prostatic obstruction, showing that urea nitrogen figures under 20 mg. per 100 c.c. of blood are regarded as good operative risks, figures between 25 to 30 should be operated on with great caution, giving a preliminary period of treatment. Figures over 30 mg. indicate renal involvement and therefore are poor operative risks.

The system of blood analysis includes the determination of carbohydrate metabolism and it is probably in this field that it renders its greatest service. For it is in the sugar determination that the treatment of the known diabetic can be regulated, the potential diabetic discovered and the differentiation of the renal

from true diabetes. The normal value, according to the Folin and Wu method, are 80 to 120 mg. per 100 c.c. or 0.08 per cent to 0.12 per cent. Much higher values than these for the normal are obtained by other methods. The delicacy of the Hamman curve is known throughout the medical field and accepted. Many investigators are using a similar technique in an attempt to differentiate carcinoma and ulcer of the gastro-intestinal tract. This is known as the Carbohydrate Tolerance Test and is also used in conditions of endocrine dyscrasias.

Metabolic determinations are being made in connection with the inorganic salts of the blood, particularly calcium, phosphorus, magnesium and sodium. The estimations of the salts are indicated in such conditions as rickets, osteomalacia, tetany, Paget's disease and endocrine disturbances.

One more laboratory aid must be touched upon before closing, namely, the determination of the CO-2 combining power of the plasma. Due to the exchange of gases brought about by the respiratory processes, the normal alkalinity of the blood is established and maintained by the so-called buffer substances of the blood. In disturbances of metabolism such as too restricted diet, wasting fevers, diseases of malnutrition, the normal alkalinity is diminished and a condition known as acidosis occurs. There are methods in urine analysis by which this condition can be detected but they are qualitative only. The degree of acidosis existing can only be determined by the CO-2 combining power of the blood plasma, the Van Slyke method being the most satisfactory. Therefore, this method is important in carrying out the Allen treatment in diabetes when the patient is in as much danger of starvation as from the disease. The administration of alkalies can also be regulated since long before the urine becomes alkaline serious damage may be done to the patient by large doses of alkalies. Before the administration of a general anesthetic it is a wise precaution, if acidosis is suspected, to ascertain the CO-2 combining power of the plasma since anesthesia tends to produce acidosis. If the patient is already suffering from a lessened alkalinity, sudden and unexplained death may occur. Any value below 35 volume per cent is not a good operative risk, the normal values ranging from 55 to 77 volume per cent. Anesthesia from chloroform and ether lowers the CO-2 combining power of the blood more than gas.

Time forbids an elaborate presentation of these and other valuable aids in diagnosis and prognosis, but suffice it to say that further researches in the field by biological chemistry hold for the physician promise of deeper knowledge into the life processes than that for which he now hopes.

Dr. Couret felt that the necessity of fasting the patient for from 8 to 12 hours before making the tests enumerated by Dr. Maher has been too lightly considered by some. This has been insisted upon in this laboratory and Dr. Couret would continue to do so, unless he was given a good reason to do otherwise.

It is a well-known fact that all foods will temporarily increase the normal values of non-protein nitrogen, urea, uric acid, etc., and unless we are thoroughly familiar with the amount and character of each food taken by the patient preceding the tests, it is a difficult matter to determine whether the increase is transitory or permanent. If, however, all patients are treated alike, that is, fasted for an equal length of time, we can determine more accurately any disturbance out of the normal.

Dr. Salatich thought that the acidosis phase of the question was of practical interest to the surgeon. It would be reducing the operative dangers to know whether there was a lessened alkalinity. Such a condition could be responsible for some of our unexplained deaths—after operations. Since anesthesia tends to produce acidosis, a pre-operative alkaline treatment would seem an eminently wise precaution. He thought we would soon come to this as a routine practice.

PROCEEDINGS OF THE TOURO INFIRMARY STAFF.

Monthly Meeting for May, 1922.

The President, Dr. C. Jeff Miller, in the Chair.

PNEUMOCOCCAL SEPTICEMIA.

Dr. R. Matas reported a death from pneumococcal septicemia, with multiple visceral and other infarcts associated with cervical adenectomy for metastatic carcinoma of the breast.

The patient, a woman 43 years of age, was first seen by Dr. Matas January 29th, 1920. She came at this time complaining of a lump in her right breast which had existed about six months,

the last two weeks of which time the mass had increased rapidly in size. A clinical diagnosis of carcinoma was made. On the morning of January 30th, a radical amputation of the breast was performed after the clinical diagnosis of malignancy had been confirmed by microscopical analysis. She had an uneventful recovery from the operation and left the institution February 19th, 1920.

On physical examination, the patient showed, in addition to the above mentioned condition, a slight secondary anemia which was attributed to an existing malarial infection—tertian plasmodia were found in the blood the day of admission.

On December 8th, 1921, approximately two years after operation, the patient returned very much worried, seeking advice regarding a massive glandular enlargement of the right side of her neck. She first noticed the beginning of this condition in June, 1921, one and one-half years after amputation of the breast. The growth was rather slow at first, but the last month before her visit here the mass increased rapidly in size. It was during this period that she began to have pain in her neck, shoulder and even into her arms.

She had chills and fever the entire summer, temperature almost every day, but no definite chill days. On numerous occasions her temperature would reach 104 to 105 degrees. She was treated by Dr. G. H. Wright, who administered quinine intravenously. She was also treated by Dr. Snelling. There was no apparent change in the febrile reaction following the quinine treatment. On arrival here she was still having temperature daily. The blood was examined very carefully on several different occasions but no malarial plasmodia were found.

The physical examination showed a well-developed and fairly well-nourished woman of a rather large structure but somewhat pale and anemic. Normal pupils and reflexes. Enlarged glands were palpable in the neck, on the right side of which was a firm, adherent, insensitive mass, the largest gland of which was about the size of a walnut with a few smaller ones around it. The glands of the left side of the neck were not palpable.

There were no palpable glands in either axilla nor was there any evidence of local recurrence in the mammary region. Inguinal glands were not enlarged.

The lungs showed fair expansion. Tactile and vocal fremitus was somewhat decreased throughout but particularly over the hilum of both lungs. Slight dullness was found over the lower portion of both lungs posteriorly. Radiographic examination of the chest showed glandular enlargement at the hilum of both lungs, marked opacity over the lower half of the left lung suggestive of pleural effusion or thickened pleura. There was no evidence of gross metastasis within the thorax. The heart was normal in size, there were no murmurs but slight irregularity, skipped a beat but not at regular intervals. The abdomen was negative.

It was evident that metastatic recurrence had taken place in the subclavian group of glands, and in all probability the mediastinal glands were involved. X-ray pictures did not show any distinct shadow in the chest, however, and the extirpation of the glands was advised. The operation was performed on the morning of December 9th, 1921. All vessels were secured carefully, thus allowing but little bleeding and there was but little shock associated with the surgical procedure.

PROGRESS.

About 28 hours after the operation, she showed the first reaction. The temperature rose to 103 degrees and with it the patient experienced a chilly feeling. The pulse at this time was also accelerated, registering 128, the patient perspiring profusely. The dressings were changed and found saturated with a pale serous-colored fluid. The temperature was controlled temporarily by sponges, alcohol rubs and small doses of aspirin by mouth. Quinine bisulphate gr. 10 in a half cup of flaxseed tea was ordered by rectum every four hours. The temperature and pulse from this time on remained very high, the wound being excluded as the cause of the reaction. The blood now showed a total leucocytic count of 10,000 with 93% neutrophiles. No malarial plasmodia were found.

On December 23rd the patient had a hard chill at 8:30 A. M. and the temperature went up to 104.2 by axilla; at this time 7½ grs. of quinine and urea hydrochloride were given intravenously. This was repeated again in one hour.

On December 24th throughout the night the temperature remained very high and did not drop below 104 degrees by axilla. She had a slight chill again in the afternoon.

The blood examination showed a total of 31,150 leucocytes, with 94% neutrophiles. Ten c.c. of Mulford's polyvalent antistreptococcal serum was given, injected deep into the gluteal region at 11:15, and at 3 P. M. 20 c.c. were given in the same way. The patient complained most of the day with her left eye. On careful examination a *marked keratitis* was found to exist. In the afternoon another dose of quinine and urea hydrochloride, 7½ grains, was given intravenously.

December 26th, the patient's general condition was much worse. On account of difficulty in nourishing the patient, a *Jutte tube* was passed through the nose and fluids administered freely. Rectal temperature was 104.2 degrees and uncontrollable by sponges or even the *Kemp irrigation*. The keratitis of the left eye was much more marked. The conjunctiva showed intense chemosis, suggestive of panophthalmitis. Dr. Blum was consulted at this time, as was Dr. Feingold the next day. Twenty c.c. of antistreptococcal serum were given intravenously at 2 A. M. and again at 12 M., making a total of 70 c.c. A total of 22½ grains of quinine and urea hydrochloride had been given intravenously up to this time.

On December 28th, the patient could not be aroused. Several blisters containing at first clear serum and later, pus, appeared. There was one on the tip of the finger where puncture was made to obtain blood for examination, two smaller ones, spontaneous, in the palm of the left hand, and one on the inner surface of the right great toe. Smears taken from the palm blister were reported to contain pure chains of diplococci. The blood taken for culture was reported negative. The urine at this stage showed 1% moist albumen.

On December 29th, the patient remained in a profound stupor, general condition showed increasing exhaustion. All feeding done through tube. One new blister appeared on right thumb.

On December 30th, the patient was not expected to live through the night, but she struggled along somehow until 6 o'clock in the afternoon. The pulse for the last 24 hours was irregular, thready and weak—at times not palpable. The respiration was entirely mechanical, breathing shallow and later marked edema of lungs. At 2:15 the patient had convulsions, every muscle quivering. This lasted from 3 to 6 minutes, during which

time she became pulseless and thought dead. At 6 P. M. she had a similar attack from which she did not recover.

DR. LANFORD'S post mortem record was as follows:

Body: Is that of a well developed, well nourished white female that measures about 5′ 4″ in length and weighs about 150 pounds. There is a scar on the right thorax extending to the axilla following the removal of the breast several years ago. There is a recent scar in the right supra clavicular area extending from the external notch to the anterior border of the trapezius muscle. This wound is practically healed except at its two extremities which show some inflammatory reaction. Post mortem lividity and rigidity are absent as the autopsy was held one hour after death. The left eye is the seat of an active inflammatory reaction, causing a clouding of the cornea. There is an injection and thickening of the conjunctiva, also an exudate. A number of small blebs are noted in the fingers and toes confined largely to the superficial structures.

Peritoneal Cavity: On opening this cavity we passed through a layer of adipose tissue about 3 inches in thickness. The omentum is short and free, except in the splenic area, where it is adherent to the abdominal wall. The intestines are distended with gas. The cavity is free from fluid but on breaking up the adhesions in the splenic area reddish purulent material is noted and a pocket enclosing the spleen is found in the left hypochondrium which includes the left tip of the liver. The diaphragm extends to the third rib on the right side and fourth on the left. The bladder is distended with fluid.

Pleural Cavity: Left pleural cavity shows a few adhesions in the superior portion and some fluid. Right pleural cavity shows the presence of several hundred cc. of fluid containing a few flakes of fibrin. Glands in the hilum of the lung are enlarged and calcified but no evidence of secondary neoplasm is noted in the glands in this area.

Pericardial Cavity: Contains fat and about 100 cc. of thick yellowish exudate without much fibrin.

Heart: Is considerably enlarged and is dilated. Shows an inflammatory reaction which is particularly noticeable in posterior portion. There are no adhesions nor "bread and butter" appearance. The muscular wall is flabby and over the apex a small recent infarct is noted. Examination of the valves in situ shows an active acute vegetation process in the aortic valve.

Lungs: The apex of the left lung posteriorly shows a few adhesions. There is complete collapse of the lower lobe of the left lung, but no evidence of pneumonia is noted. The upper lobe is edematous.

Liver: Slightly increased in size and is of a yellowish appearance with areas of congestion. On sectioning, it presents a nutmeg appearance and shows evidence of fatty degeneration. The gall-bladder is negative.

Spleen: It is about twice its normal size and very irregular in outline presenting a number of nodules and several areas of liquefaction, which on sectioning proved to be infarcts in various stages of suppuration. The cut surface of the spleen shows a considerable amount of congestion and increased softening of the pulp and purulent infiltration.

Pancreas: Negative.
Adrenals: Negative.

Kidneys: Both kidneys are increased in size and show a number of recent infarcts. There is noted in the right kidney an old healed scar as a result of a former infarction.

Gastro-Intestinal Tract: A few isolated infarcts are noted in the small intestines.

Anatomical Diagnosis: General septicaemia. Acute aortitis (vegetative); lobular pneumonia; septic infarcts of the spleen; septic infarcts of the kidneys; localized peritonitis; acute pleuritis; oedema of the lungs; healed pulmonary tuberculosis; dilatation of the heart. Culture from the heart's blood shows the presence of diplococci occurring in chains. Smear and culture from the pericardial cavity shows a similar type of organisms.

Conclusions.

This observation was presented as an unusual example of *septic endocarditis* complicated by an immense number and variety of pyemic infarcts in the spleen, heart, lung, liver, eye (keratitis, panophthalmitis), skin (vesiculo-purulent bullae in toes, fingers, palms of hands), which appeared as a complication after a block adenectomy of the *right cervical* lymph nodes for metastatic carcinoma following an operation for carcinoma of the breast, performed about 18 months (1½ years) previously.

The endocarditis existed probably at the time of the first operation, when it was diagnosed as a chronic malarial infection and continued simulating malarial intermittent fever during the entire period that intervened between the first and the second operation (18 months); but it was apparently greatly aggravated and intensified by the second operation, which seemed to have rekindled the endocardial infection and thrown out a perfect shower of infarcts, which were carried by the *arterial stream* to every part of the body.

The diagnosis of septic endocarditis was obscured by (1) the reported presence of Plasmodia (Tertian type) in the blood at the time of the first operation; by (2) the intermittent and paroxysmal attacks of chills and fever for over two years including the period intervening between the first and second operation; (3) by the absence of distinct cardiac murmurs, except at the base (aortic) which were heard only during the last illness and were supposed to be hemic—as they were far from constant or well accentuated; (4) by the rather low leucocyte count, except in the last illness when the total white count jumped from 10,000 white and 93 Polys (Dec. 12, 1921) to 31,150 and 94 Polys on Dec. 24th, 1921; (5) by the remarkable absence of well defined signs pointing to the chief visceral

metastases (especially the spleen) until the very last hour before death; (6) by the fact that the first and most notable infarct in the eye (Keratitis) had apparently occurred at different times coincidently with the supposed chills and fever (as a malarial herpetic keratitis) the inflammation in the cornea and conjunctiva subsiding gradually with the disappearance of the fever. These eye manifestations had occurred alternately in both eyes at different times in the last 18 months since the first operation and had always disappeared.

The true septic and pyemic character of the infection was however made apparent after the keratitis was found to be an interstitial, purulent infection contributing only a part of a general panophthalmitis, and when the sero-sanguinolent bullæ appeared in the digits, palms and soles of the feet.

Apart from the difficulties in the diagnosis presented by this case, in its incipiency, which were very unusual, and the questions that were suggested by this remarkable observation, were (1) what was the relation as cause and effect that existed between the trauma of the second operation and the extraordinary relighting and aggravation of the endocardial and general septicopyemic phenomena? (2) In view of the negative result of all the blood cultures taken in vivo and the late recognition of the pneumococcus in the smears of the blisters, what line of treatment could have been suggested apart from the Polyvalent antistreptococcal antitoxins or stock vaccines?

Presuming that this was a pneumococcal infection or that the pneumococcus became mixed with the original endocardial infection, what could we expect therapeutically in the presence of multiple infarcts from massive doses of Polyvalent pneumococcal antitoxins?

Dr. Lanford said that he could add nothing to his report as read except to comment on the fact that cases of septic endocarditis present very great difficulties in demonstrating the organism in the circulating blood, because these organisms are in such small numbers that we can rarely catch them when the "shower" is present in the circulating blood. These small groups of organisms usually find their way in the end vessels of the parenchymatous organs, particularly the spleen and kidney which more frequently show infarcts than do other organs of the body. The fact that we find occasionally small infarcts in the

digits and in the eye, show that very minute groups of bacteria are thrown off.

The picture of the suppurative foci in the digits and cornea of this case were characteristic of pneumococcic infection because this type of organism is associated with the formation of small blister-like foci more than that of other organisms and, for this reason we can recognize this type of infection from its clinical appearance whether it occurs around the finger nails or elsewhere.

In this case, the principal valve involved was the aortic, there being practically no extinction to the mitral valve which would tend to explain why no murmurs were heard in this heart. This fact would also explain the absence of symptoms of infarcts in the other organs of the body.

DR. LEMANN stated that ulcerations of the aortic valve in ulcerative endocarditis were much less common than those of the mitral. Just about the time that this case came under Dr. Matas' observation he saw a negro at Charity Hospital who was admitted with fever of unknown origin who gave a history of very short duration of illness, only some days or weeks, who had at the time of admission a temperature of 103 and 104 and a slightly enlarged spleen. Blood examination was negative. Widal negative. Physical examination beyond the enlargement of the spleen was negative; there were no heart murmurs. In the course of a week he had been examined by successive groups of students and it was the second or third group of students who called Dr. Lemann's attention to the wonderful capillary pulse in this man. He had been examined a number of times and no discovery of this kind had been made. There was now a loud systolic murmur. All of this developed in a few days. Death came within a week and at autopsy there was a tremendous ulceration of the aortic valve with perforation and vegetation appearing on the mitral side. This case was remarkable because of its acuteness. It was not possible until the appearance of the capillary pulse to make a diagnosis. The man had no metastasis and no infarcts. Dr. Lemann had never seen one appear so acutely nor attack the aortic valve as in this case and that of Dr. Matas. He saw other cases which simulated malaria, cases where the patients had apparently recovered from ulcerative endocarditis who had in previous years been

diagnosed as recurrent malarias. Some of these cases we must hesitate to regard as being cured for they tend to recur.

GOITRE.

DR. A. B. PITKIN exhibited a "type case" of thyroid disease that he had presented at the last meeting, through the courtesy of Dr. Stone. It was a distinct case of Graves' disease. The section of the gland was described by Dr. Lanford as one of the most toxic he had seen. In addition to the marked infolding which is characteristic several areas showed degeneration, which no doubt increased the toxicity; no colloid material was found. The first attempt at a metabolic measurement was a complete failure because of extreme fear and apprehension; the first satisfactory measurement was plus 110%, and subsequent measurements with patient ambulent were plus 95% and 96% respectively. After complete rest in the hospital the rate dropped to an average of plus 78%. As mentioned at the last meeting the question arose: "Is this patient a good operative risk?" The essential features noted during the period of observation extending over 5-6 weeks were as follows: Lowering of pulse rate from 140 to 80-85, gain in weight, 5 lbs.; able to rest at night; tremor markedly decreased, and from an apparent "jumping jack" because of incessant involuntary movements, he presented almost the opposite picture, he had quieted down so much. Thyroidectomy was performed by Dr. Stone a few days after the last meeting. The patient's convalescence was uneventful aside from a period of immediate marked postoperative thyrotoxicosis with elevation of temperature of 103 degrees and pulse 150, which lasted about 48 hours, with a gradual and steady decline to normal. Patient was discharged from the hospital four days ago and a metabolic measurement was made this morning. It was striking to note the patient lying perfectly quiet, like I had never seen him before, with a pulse of 52. The B. M. R. proved to be –11% which is quite a contrast to the original rate of plus 110%. No doubt this bradycardia is due to the fact that this previously overstimulated heart with a violent poison for a period of months is now having difficulty in adapting itself to the marked change of stimuli, even though it is perfectly regular.

Another patient was presented, a toxic adenoma, which was also shown at the last meeting. Her rate had been persistently

plus 40% and after rest in the hospital it lowered to plus 20% and then to a 0% variation. She made an uneventful recovery. The section shows many areas of adenoma throughout the gland, with deposits of colloid. A post-operative measurement has not been attempted.

Another case presented at the last meeting which was distinctly toxic clinically, with a rate of plus 40% lowered to plus 20% after rest, was also labeled toxic adenoma. Thyroidectomy was performed and the section showed the classical picture of a colloid goitre. This case represented the type of case in which there was a focus of infection which stimulated the thyroid to oversecretion; the latter appears in periods which alternate with periods of rest. During the "resting stage" colloid is deposited or accumulates. The final picture was that of a large colloid goitre associated with a distinct thyrotoxicosis.

NEWS AND COMMENT.

THE GORGAS MEMORIAL FUND. At the St. Louis Annual Session the Board of Trustees reported to the House of Delegates that in response to a request received from the directors of the Gorgas Memorial Institute of Tropical and Preventive Medicine for the co-operation of the American Medical Association, the Board had taken action which resulted in the appointment of a committee, representing the American Medical Association, to act on the project. The following were appointed: Dr. George E. de Schweinitz, Philadelphia; Dr. Charles W. Richardson, Washington, D. C., and Dr. Fred B. Lund, Boston.

The House of Delegates unqualifiedly endorsed the Gorgas Memorial as a tribute to a past President of the organization and one of its most distinguished and loved members. At its recent meeting the Executive Committee of the Board of Trustees received the following statement from the committee and directed its publication.

STATEMENT AND APPEAL FOR CO-OPERATION.

As a result of the stimulating suggestions of President Porras of Panama, it has been resolved that a fitting memorial shall mark the humanitarian service of the late Major General William C. Gorgas and the beneficent influence of his life and work on mankind throughout the world. Following the thought of President Porras, it has further been decided that this memorial shall take the form of a scientific institute for the study of tropical diseases and of preventive medicine.

No better place could have been selected than Panama City, the gateway between the Atlantic and the Pacific, where General Gorgas' well-planned and executed work made possible the building of the Panama Canal.

It is hardly necessary to call the attention of the medical profession to the far-reaching effects of General Gorgas' work on the welfare of the people of the whole world, especially in tropical and semi-tropical climates, and in all places subject to the inroads of infectious disease.

We of the medical profession remember him as our Surgeon General during the early part of the World War. We remember his prompt recognition of the necessity of bringing into active service large numbers of physicians and surgeons from

civilian life. We remember his genial and kindly nature, his high character, and his steadfast effort directed toward the organization and equipment of the Medical Corps of the Army. We remember the patriotic response. We remember him as a great sanitary officer, to whom we wish to pay a lasting tribute.

A central committee has been formed, with Admiral Braisted, retired, ex-President of the American Medical Association, as its president. The American Medical Association has appointed a committee of three to work in accord with the central committee, and through its members this appeal is made to the American medical profession.

The plan is to build at Panama an institute for the study of tropical and infectious diseases, with a hospital, laboratories, departments for research and all other facilities required in an institute of this character, erected and administered according to the most progressive, modern ideals. The Panamanian government, owing to the far-sighted, philanthropic vision of President Porras, has donated the great Santo Tomas Hospital, and also the ground on which it is proposed immediately to construct the buildings as they have been described. Dr. Strong has been appointed the scientific director.

In conjunction with this work in Panama, there will be established in Tuscaloosa, Ala., the Gorgas School of Sanitation for the purpose of training country health workers, sanitary engineers and public health nurses, especially educated to deal with the problems peculiar to the Southern states.

An endowment of six and one-half million dollars will be required to enable the institute to carry on the work according to the plans which have been formed.

The Republic of Panama has demonstrated its sympathetic and practical interest in this enterprise with splendid liberality. The physicians of our country, and especially the members of the American Medical Association, surely will not disregard the memory of a former President, and will seize the opportunity to make in this respect a contribution of which they will be proud.

The campaign for funds is to be international. A large response is expected from North, Central and South America, since the nations of these countries have been the chief beneficiaries of the labors of General Gorgas. It is fitting that his

co-workers of the American medical profession should be requested to respond generously to this appeal. It is hoped that every member of the American Medical Association will make as liberal a subscription as possible. Any sum will be gratefully received. Checks should be drawn to the order of the "Gorgas Fund" and should be mailed to the American Medical Association, 535 North Dearborn Street, Chicago.

CHARLES W. RICHARDSON, Washington, D. C.,
F. B. LUND, Boston,
G. E. DE SCHWEINITZ, Philadelphia.

EYE, EAR, NOSE AND THROAT HOSPITAL TO OPEN. The opening of the new building of the Eye, Ear, Nose and Throat Hospital is to take place on October 1st, 1922. This new building replaces the old structure in which many thousands of the citizens of New Orleans have received treatment and with all modern equipment and arrangement, the service to the community will be correspondingly increased. Dr. Charles Chassaignac is the Superintendent.

SOUTH AMERICAN CRUISE. The American College of Surgeons is planning for a cruise starting from New York on February 10th, 1923, to the principal South American countries.

A NEW DEPARTMENT OF THE EYE, EAR, NOSE AND THROAT JOURNAL, OF CHICAGO. The above journal has recently established a new department devoted to an Abstract of the Proceedings of the Section of Ophthalmology and Oto-Laryngology of the Royal Society of Medicine of Great Britain, and Dr. Fayette C. Ewing, of Alexandria, has been secured to take charge. Dr. Ewing is one of the Original Fellows and the only living Fellow of this Society in America, and for several years was Abstract Editor of The Laryngoscope.

ANNUAL ROLL CALL OF THE AMERICAN RED CROSS. The annual roll call of the American Red Cross, in which its membership is renewed from year to year, will take place in the period between Armistice Day, November 11th, and Thanksgiving Day. This is the only appeal that the National Organization makes during the year; and is for the purpose of maintaining its membership at such a point as will enable it to perform those duties which are placed upon it by Congress.

SIXTH DISTRICT MEDICAL SOCIETY MEETING. There will be a meeting of the Sixth District Medical Society, in Donaldsonville, on Wednesday, October 11th, 1922. A splendid scientific program has been arranged, moving pictures, etc., and it is hoped and anticipated that every member of the Sixth District Medical Society will be in Donaldsonville on the above date.

AT THE CHARITY HOSPITAL, NEW ORLEANS. Bids are being received for the installation of automatic sprinkler system in the new clinic addition. When this building is installed with a sprinkler system, the entire hospital will be protected from fire by this safety device.

Through the generosity of Mr. Sam Bonart, Charity Hospital has been allowed to order an incubator for premature babies.

Two additional lungmotors have been added to the ambulance equipment. At present the three ambulances are fitted with these life saving devices.

The Nurses' Training School, which is under the direction of Sister Kostka, is steadily growing. At the present time one hundred student nurses are enrolled, and twenty additional probationers are expected in the near future. Applicants, of whom there have been 175 since January, are accepted between the ages of eighteen and thirty-five, and must have at least first year high school education.

The School was opened in 1896, and since that time six hundred nurses have received diplomas. A very comprehensive course of training has been built up, and at present, the nurses are the only ones to be accepted by the New York Board of Regents from this State without examination. By the time a nurse has spent the three years necessary for graduation here, she has had training in every service in the hospital, including the Out-Patients' Clinic, the clinical laboratories, physiotherapy, anesthesia and public health nursing. The hospital also offers courses in post-graduate training.

CHATTANOOGA MEETING OF THE SOUTHERN MEDICAL ASSOCIATION. The Southern Medical Association will hold its Sixteenth Annual Meeting in its birth city, Chattanooga, Tenn., November 13th to 16th, 1922. Dr. Seale Harris, of Birmingham, Ala., is President.

This meeting will be made up of eighteen sections and conjoint meetings, and a most excellent program covering every phase of both medicine and surgery will be presented. Of unusual interest will be the joint dinner session of the Section on Surgery and the Section on Radiology, Tuesday night, at which time Dr. Geo. W. Crile, of Cleveland, Ohio, and Dr. Geo. W. Holmes of Boston, Mass., will make addresses. All physicians and surgeons are cordially invited to this session.

Entertainments include a president's reception, with dance, on Tuesday night, and a dance and "get together meeting" on Wednesday night. On Tuesday and Wednesday elaborate entertainments have been provided for the wives of visiting physicians. Those who are inclined to golf will be accommodated as a number of tournaments are being arranged.

Chattanooga excells in beautiful scenery and in points of historic interest, among these being Fort Oglethorpe which so many former Service men will visit with varying emotions.

The members of the Association will receive, without applying for them, certificates entitling them to reduced railroad rates. Any doctor, who is a member of his State and County Medical Society, although not a member of the Southern Medical Association, who desires to attend this meeting, can have the benefit of these reduced rates by requesting a certificate from the Association office.

Civil Service Examination. The United States Civil Service Commission announces an open competitive examination for research assistant in Child Hygiene. Vacancies in the Children's Bureau, Department of Labor, at $1,600 to $2,000 per year will be filled from this examination.

All citizens of the United States may enter this examination if application is accepted. The principal duty is to assist in conduct of research work in the field of child hygiene. Applications should be addressed to the Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board, Custom House, New Orleans, for Form 2118. Receipt of applications to close October 10th, 1922.

Removals: Dr. J. M. White, from Gueydan to Lake Charles.

Dr. J. E. Hawkins, from Bayou Chicot, La., to DeWitt, Arkansas.

BOOK REVIEWS AND NOTICES.

All new publications sent to the JOURNAL will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the JOURNAL to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.

Mind and Its Disorders, by W. H. B. Stoddart, M. D., F. R. C. P., fourth edition. P. Blakiston's Son & Co., 1922.

The fourth edition of this splendid work will be welcomed by the medical profession because of its clarity, brevity and the simplicity of the presentation of this most complex branch. The book is exceedingly readable, which is alone a high recommendation, besides the accuracy which former editions have proved beyond question, and to which the present edition is no exception. The book is highly colored by the teachings of Freud, whose work the author seems to accept without question. The growing criticism of the Freudian theory would leave this work open to considerable criticism in certain quarters. C. J.

Rational Treatment of Pulmonary Tuberculosis, by Chas. Sabourin, M. D. Authorized English translation from the sixth revised and enlarged French edition. F. A. Davis Co., 1921.

It is interesting to find that the highest authorities in the French School agree closely with the American and English schools in their methods of treating Pulmonary Tuberculosis. It has been widely believed in the English speaking world that the French profession depended largely on the use of drugs in their fight against the great white plague. Anyone who reads Dr. Sabourin's book will disabuse his mind of this idea and will see that the same measures are in use by scientists in France as well as in this country. Exception might be taken to the fact that the author does not believe that the victim of Pulmonary Tuberculosis should be exposed to the direct rays of the sun, but recommends only that he should be able to see the sunlight but should be scrupulously guarded from exposure to the direct rays. A careful study of this translation will thoroughly repay anyone interested in the treatment of Pulmonary Tuberculosis. C. J.

Greek Medicine in Rome, by Sir T. Clifford Allbut, K. C. B. McMillan & Co., 1921.

By writing this book, the distinguished author, already recognized as pre-eminent in the fields of teaching and practice of medicine, proves himself also a great medical historian, and the vast amount of study and research undertaken in the preparation of this great history is staggering. One cannot fail to have his appreciation of the vastness and antiquity of the profession of medicine brought strongly to mind by even the superficial scanning of such a book. All of those interested in the history of medicine will welcome Dr. Allbut's book, and will have many pleasant hours to look forward to in reading a splendid work. C. J.

PUBLICATIONS RECEIVED.

P. BLAKISTON'S SON & CO., Philadelphia.

The Diagnostics and Treatment of Tropical Diseases, by E. R. Stitt, A. B., Ph. G., M. D., Sc. D., LL. D., 4th Edition, revised.

Hughes' Practice of Medicine, by R. J. E. Scott, M. A., B. C. L., M. D., 12th edition.

C. V. MOSBY COMPANY, St. Louis.

Principles and Practice of X-Ray Technic for Diagnosis, by John A. Metzger, M. D.

Diseases of the Skin, by Henry H. Hazen, A. B., M. D., 2nd edition.

W. B. SAUNDERS COMPANY, Philadelphia and London.

Obstetrics for Nurses, by Joseph B. DeLee, A. M., M. D., 6th edition, entirely reset.

THE YEAR BOOK PUBLISHERS, Chicago.

The Practical Medicine Series, Volume 1, General Medicine, Series of 1922. Under the general editorial charge of Charles L. Mix, A. M., M. D.

WASHINGTON GOV'T. PRINTING OFFICE, Washington.

Mortality Statistics, 1920.

United States Naval Medical Bulletin, Vol. 17, No. 2, August, 1922.

Public Health Reports, Vol. 37, Nos. 31, 32, 33, 34, 35.

Public Health Bulletins, No. 121, Rodent Infestation and Rat-Proofing Conditions in Massachusetts Seacoast Cities, New York City and Baltimore. No. 122, Public Health Administration in Arizona.

MISCELLANEOUS.

Transactions of the American Pediatric Society, Vol. 34, 1922.

Contributions to Surgical Technique, by Dr. F. P. Canac-Marquis.

Paralysie Flasque du Membre Supérieur, Extrait du XXVI Congrès Français de Chirurgie, par le Docteur Louis Mencière, de Rheims.

Address of Prof. Geo. Soulé, LL. D., president Soulé College, 66th Commencement Exercises.

REPRINTS.

Public Health Reports, Nos. 728, 732, 746; Die Immunitatserscheinungen bei den Tropischen Spirochaetenkrankheiten, by Prof. Dr. W. H. Hoffman; **Laboratorio de Investigationes y Estudios,** by Prof. Dr. W. H. Hoffman.

MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for August, 1922.

CAUSE	White	Colored	Total
Typhoid Fever	4	3	7
Intermittent Fever (Malarial Cachexia)	2		2
Smallpox			
Measles			
Scarlet Fever			
Whooping Cough	2		2
Diphtheria and Croup	3		3
Influenza	1		1
Cholera Nostras			
Pyemia and Septicemia		5	5
Tuberculosis	25	30	55
Cancer	27	14	41
Rheumatism and Gout			
Diabetes	7	3	10
Alcoholism			
Encephalitis and Meningitis	2	1	3
Locomotor Ataxia			
Congestion, Hemorrhage and Softening of Brain	26	14	40
Paralysis	1		1
Convulsions of Infancy			
Other Diseases of Infancy			
Tetanus	3	1	4
Other Nervous Diseases		1	1
Heart Diseases	48	46	94
Bronchitis	3	1	4
Pneumonia and Broncho-Pneumonia	21	15	36
Other Respiratory Diseases		1	1
Ulcer of Stomach	2		2
Other Diseases of the Stomach		3	3
Diarrhea, Dysentery and Enteritis	5	5	10
Hernia, Intestinal Obstruction	4	2	6
Cirrhosis of Liver	3	3	6
Other Diseases of the Liver	6		6
Simple Peritonitis	1		1
Appendicitis	7	3	10
Bright's Disease	27	12	39
Other Genito-Urinary Diseases	4	2	6
Puerperal Diseases	7	4	11
Senile Debility			
Suicide	1		1
Injuries	25	16	41
All Other Causes	39	24	63
Total	306	209	515

Still-born children—White, 29; colored, 21; total, 50.

Population of City (estimated)—White, 295,000; colored, 110,000; total, 405,000.

Death rate per 1000 per annum for month—White, 12.45; colored, 22.28; total, 15.27. Non-residents excluded, 13.17.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure	29.97
Mean temperature	83.
Total precipitation	5.71 inches

Prevailing direction of wind, west.